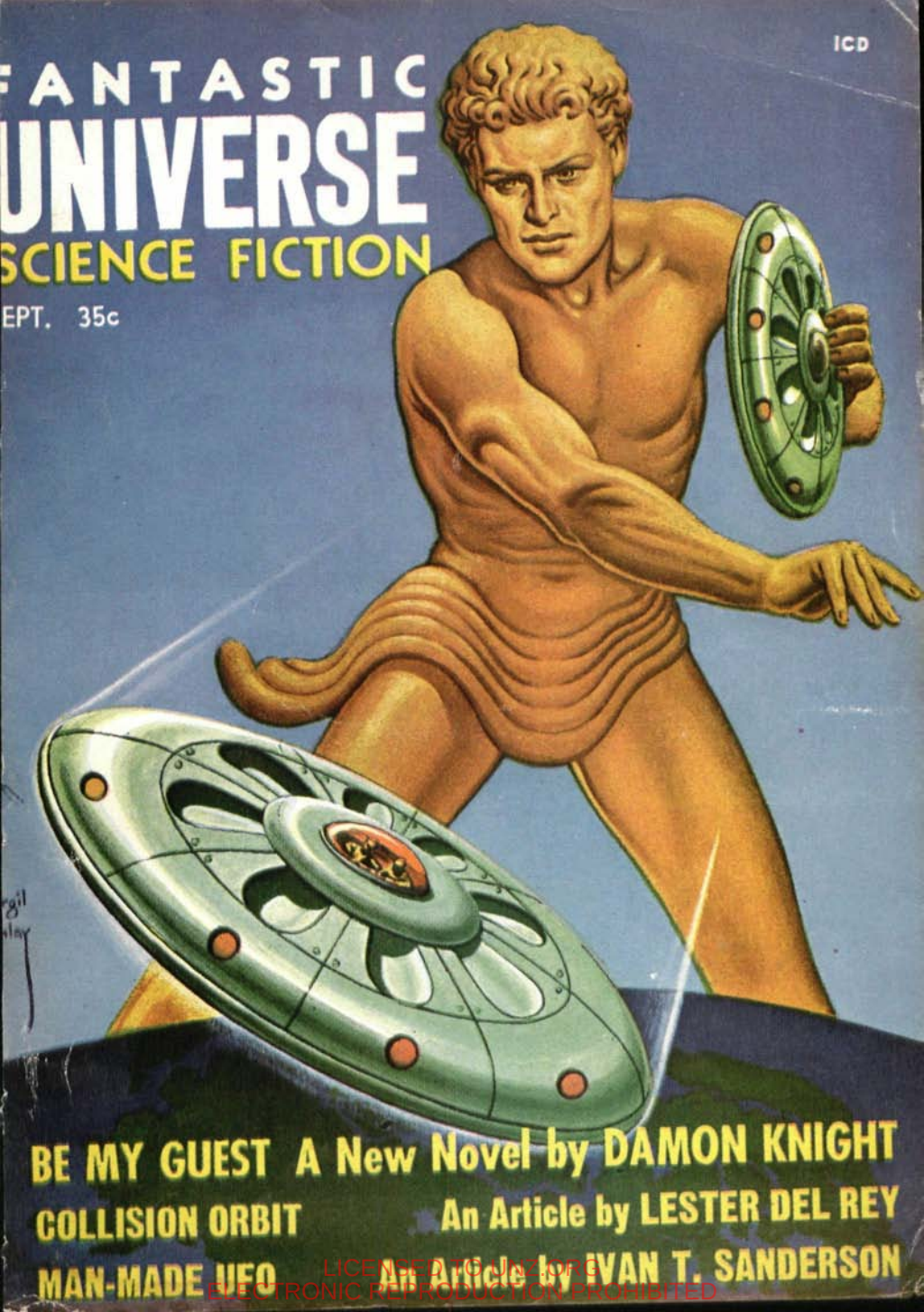
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FANTASTIC
UNIVERSE
SCIENCE FICTION
EPT. 35c
BE MY GUEST A New Novel by DAMON KNIGHT
COLLISION ORBIT An Article by LESTER DEL REY
MAN-MADE UFO An Article by IVAN T. SANDERSON
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DISCUS THROWER

It is a lonely thing to be what Man calls a "God."

We live only in legends—in the folk memories of people who have lived for a thousand years or longer on the same patch of land and who, in the course of these years, have caught from the earth itself and from the air around them something of the ages-old truths that people in the cities have forgotten.

There are sayings about us, of course—"there were giants in those days," and the like—repeated without any understanding of what they really mean and of the fact that, more than they realize, it *is* quite true that there were giants on the Earth at one time.

We were those giants . . . .

Some of us live in the mountains near the Gobi desert these days. Still others of us are in the Amazon Valley, and the rest of us down in the Antarctic that these little people are now exploring, searching for the green valley beyond the mountains that they have heard about for hundreds of years but have yet to find. We have taken care of that, and it is unlikely that they will ever stumble on our colony. We have thrown a protective force-field over the area that should prevent annoyance for some time—until they discover how to project themselves beyond this barrier.

My brother was on temporary duty in the Amazon Valley some years ago, and was innocently responsible, at the time, for a rather silly happening. He had been dispatching some of the control discs that we use to absorb the *Thora-rays* that penetrate into Earth's atmosphere. He was standing on a riverbank, watching the reflection of the discs in the clear green water as he released them, when he sensed strangers coming through the forest. It has been found that men are usually startled when they come upon us, so he *tril'd* himself into another continuum. But he forgot that he had been standing in soft soil, and when these people—some Indians and a European with a little beard—neared where he'd been, there were his footprints.

The little European (my brother gathered afterwards that he might have been what they call an American) apparently told later how he had discovered, deep in the Amazon valley, the foot print of a giant Venusian. They never stop to think that giant humanoids couldn't survive for a day on Venus. Somebody even suggested that my brother must have come there in a "flying saucer"—the strange name these people have for the discs—just as "saucers" had landed there "ten thousand years ago" (so he said). They're often so silly, these people.

It is a lonely thing, really, to be the seldom sensed guardians of this world, but it is interesting work. And there are moments when you *can* feel rather pleased, such as these days when they seem to be close to exploring space.

My brother visits me sometimes—he is stationed at the Antarctic base now — and we stand side by side letting the cool mountain winds play against us, throwing out the discs with their little robot controls, and talking about the days when we could and did walk more freely on this earth . . . .

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FANTASTIC UNIVERSE

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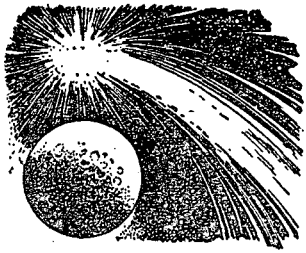

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the sword

by . . . J. F. Bone

DESPITE its utilitarian shape and the fact that someone long ago had sharpened the blade, the sword was a toy,—a symbol of authority carried by some forgotten officer before the days of fission, fusion and nuclear energy. It lay beneath what once had been the officer's quarters of an advance missile base, bright and unharmed under the thick glassy crust left by the exploded bomb. The blade and scabbard of stainless steel and the hilt of black bakelite were untouched by the force that had destroyed the base. Protected by the glassy slag and its own inherent resistance to corrosion, it lay quietly entombed, a buried reminder of the Last War, the war that ended before it had really begun.

In time the glassy soil was reclaimed. The greenish glow that filled the area ultimately disappeared. And, in time, the forest returned to cover the seared scar of thermonuclear destruction. By chance a tree grew over the spot where the sword lay buried, rising from an undigested seed in the droppings of a passing bird. And, in time, the tree grew until it dwarfed its neigh-

Arn was shocked and sympathetic—and appalled. A two-thousand-year-old quest was finally ended.

The quiet life of Dr. J. F. Bone began at the age of ten when he showed a "distressing tendency to read Freud and Hugo Gernsback's Amazing Stories." *Continued when he "commanded a border station on the Burma-China border," managing "to get shot at a few times but never hit." Now he is teaching, doing research, rebuilding decrepit houses,* and *writing science fiction.*

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bors, rising tall among its fellows in the blast area.

And as ever happens to individuals greater than the mass, it was cut down with brutal abruptness. A thunderstorm swept across the forest, and from the gray-glowing masses of storm clouds a bolt of lightning flashed to earth and struck the tree. With a rending noise of ripping wood, the tree split along its length as though struck by a gigantic axe, swayed on its root base for a moment, leaned—and fell crashing to the ground, destroying a dozen of its lesser neighbors as it fell.

Clutched in its root system, the sword was torn from its resting place in the dry concavity beneath the trunk and brought again to the light of day. It lay quietly in the rain gleaming with untarnished luster as the fat drops washed the dirt from its surface . . .

Harl walked blindly through the forest, his normal caution lost in the helpless rage that consumed him. He walked unheeding, careless of the storm that racked the tree trunks and roared with the angry voice of the Thunderbird. The lesser animals of the forest had long since sought shelter from the fury of the Sun's messengers and the Bird who bore them, but Harl was oblivious. Compared to his anger, the flash of lightning and the violence of thunder were puny things.

Vorg had no right to take Nalla from him. Even though Vorg was Chief, Nalla had been promised. He had fought for her with the other young men of the tribe, and he had conquered. With grinding labor he had cleared a space among the trees for their garden plot and had built the house that was to be their home. With skill and cunning, he had slain beasts for their flesh and skins, and had traded them with equal skill and cunning for the products of Tharg the weapon maker and Ula the potter. His house was the finest of all the tribe save only for that of Vorg. Its furs were new and soft, its tools and weapons bright with golden brass and ruddy copper, its bowls, pots and jars shining red and blue from the thick glaze Ula had baked into their smooth clay surfaces. It was a house worthy of Nalla's beauty, and of his position as a hunter.

But even as he went to claim her, Vorg came before him. Her father dared not object for Vorg was Chief, and a man to be feared. Harl ground his teeth in helpless rage. He knew why Vorg had done this thing. The chief was getting old and he feared the power of Harl and, in this way, cunningly, he sought to enrage the younger man, to provoke him into a challenge. And then Vorg would slay him and preserve his right to rule. For Harl knew with cold certainly that Vorg would triumph. The chief's mature body and battle-wisdom were still too great to be matched by any of the young men of the tribe. Harl shivered as he recalled how closely

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he had come to falling into the trap Vorg had set for him. He knew then that he must leave the tribe. There was no other solution, but he hated the implication of cowardice and the knowledge that in one way or another Vorg would win. Still, he couldn't wait for the years to pass before his time would come. For in those years Vorg would have Nalla and every day that fact would goad and rankle until his control snapped. If he stayed there could be but one outcome, a Sar-ayal—a chief battle—and within a week Vorg would stand triumphant while the tribe roasted his dead body for the ritual feast before the burning.

If he had a weapon that would equalize the odds, he would try to kill Vorg, but there was none. Spear and club were the weapons of the people and, with either of these Vorg was his master. He growled deep in his throat with raging frustration, but Harl was intelligent enough not to deny the simple fact that combat with Vorg would be suicide, and he had no wish to die. His steps carried him past the lightning-blasted tree. It lay on the earth, a fallen giant, a chief-tree toppled by the power of the sun. It was an omen. Perhaps the Sun would show him the way to overthrow Vorg. He raised his arms to the cloudy skies overhead.

"Oh, Sun!" he prayed. "Hear me, thy servant Harl. Grant me a weapon with which I may kill Vorg. He has broken the law of the people. He has stolen the woman Nalla who was promised to me. He is evil. He is my enemy. Listen, oh Sun!—and heed.

"I will keep faith, nor will I break the law. Thy light will guide my people. Sacrifices will forever smell sweet in thy nostrils. Grant me a weapon, Oh Sun, and this I swear!"

He bent his head reverently and the gleam of silver metal in the upturned roots of the fallen tree caught his eye. His breath stopped in his throat! He knew of God-metal, the bright, uncorroded stuff that no tool or heat could touch. His tribe had bits of it, carefully preserved as charms and amulets. No one knew where it came from, but occasionally pieces were found in stream beds, and in fresh earth turned by landslides. There was a tale that a far-distant tribe had a great piece of it, a rayed circle studded on its periphery with little rays, a sun-charm of great magic, but he had never seen it—this piece was the largest he had ever seen.

His hand moved slowly downward to draw the sword gently from its cover of dirt and roots. By accident his thick fingers closed about the hilt. The way it fitted told more than any explanation. This was to be grasped. But why it was to be grasped he didn't know.

He pulled, and one of the scabbard rings caught in a tangling root furnished the needed resistance. The sword slid easily from its sheath and glittered in an arc

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of silver fire in the gray daylight!

Harl looked at the sword—amazement written on his heavy face. He shook it tentatively, and the blade whispered through the humid air. He ran his calloused thumb over the edge and jerked it back from the bite of the sharp metal. He stood still, eyeing the bright blood dripping from his thumb, his thoughts churning with mixed fear and elation as he realized that this was the weapon he sought! The Sun had answered his prayer! The analogy between the saber and the crude skinning and flensing knives of his people was crystal clear. This was a knife, the greatest, longest, sharpest knife he had ever seen. It must be a weapon. There was no use for such a thing except for that purpose. It was fitted to hew and kill, to pierce and cut.

Harl bowed his head to the power of the Sun. He had prayed and this wondrous thing had come to his hand. The Sun was obviously with him, but there must be a final test. He needed proof.

For a moment he stood holding the blade in his broad palms. Then he raised it over his head, arms outstretched, offering it—tense, rigid—half fearful that the Sun would reclaim the gift. But nothing happened. Nothing came through the air to take the metal from his hands. And as he waited the storm blew past and the sun shone brightly through the scattered clouds. He sighed and relaxed. Obviously he was meant to keep it. And he knew precisely for what purpose!

He turned and retraced his steps, holding the scabbard in one hand and the sword in the other, taking occasional cuts at weeds and branches, marveling how the sharp metal sheared effortlessly through the horny growth. Now let Vorg look to himself. For by nightfall there would be a new chief in the village!

Harl the Chief looked at the shining blade for the thousandth time—or was it the ten thousandth? It was a pleasure that never died. Truly the Sun had been good to him in the years since he had slain Vorg. His eyes coursed over the delicate engraving along the fluted length of the blade, returning always to the spread figure of the Thunderbird etched into the metal about halfway down the blade. Surrounded by a leafy design, the bird stood awkwardly, legs and wings out-thrust, a great striped shield covering its breast, one talon grasping a leafy branch while the other held a sheaf of spears. The symbolism was obvious. The bird was the totem of the Forest People—that was the meaning of the branch and the leaf design, and the spears meant that it would guide them in war. Above the bird's head was the stylized sun totem with the stars and clouds inside its belly that told the story of the Sun's dominance of the heavens and his eating of the stars each dawn. The

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linked US on the opposite side was probably the sacred symbol of the Sun. But there was much that held no meaning—particularly the plate covering the breast of the Bird and the broad pennon fluttering from its beak. It made no sense unless the Thunderbird was about to build a nest. He had often seen nesting birds carry broad blades of grass in their beaks. But that was silly. Even the youngest child knew there was but one Thunderbird, and where there was but one there was no need for a nest. The cleanly etched letters on the pennon made no impression. Since he knew nothing of writing, he didn't even know they formed words. To him, they were but pieces of design.

With a sigh, Harl slid the bright blade back into its scabbard. It was time to inspect the work of his people. Tash, the Weapon Maker, had found a way to melt certain black rocks, and with the gray metal that flowed forth, the tribe had tipped spears and made knives similar to the sword he carried. Though they were poor things, softer than his sword, they were sharper and harder than brass or copper, and they made the People invincible in war. His tribe was the greatest among the tribes of the forest and waged unending war to extend the power of the People and to provide the constant sacrifice he had promised to the Sun.

Harl stretched his huge frame as he looked down upon the level expanse of treetops below the castle to the place of sacrifice that smoked sullenly in the village square. Today it was a great cat, a predator that smelled sweet to the Sun. Yesterday it had been a virgin, one of the sixty exacted as yearly tribute from the conquered tribes. Tomorrow there would be something else but always there was something. A growing priesthood had risen to provide the ritual that worship of the Sun demanded—but they were merely what once had been the shamen, and were of no importance. They did as they were told, for the sword was a greater sign by far than all their amulets and charms. He who held the sword held the power of the Sun, and no shaman in the Forest dared to oppose this obvious sign of heavenly favor. Harl was in the fortunate position of a ruler who controlled both State and Church. The grim log walls towered behind his back, the iron hardwood baked to a silver gray by the harsh sun and fierce rains. He was the master of all his eyes could see. He had been master ever since he had killed Vorg. He was the favored of the Sun—a man of destiny. Harl smiled as he reflected upon his wars. Generally they had been settled by personal combat between the chiefs—the victor taking over the duties and overlordship of the vanquished while the vanquished burned to the greater glory of the Sun. There had been none able to stand against the blade he carried although the giant chief of the Deep Forest People

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had been hard to kill. The rich odor of his burning had ascended to Heaven where the Sun turned his brazen face toward earth. And the Sun, to show his gratitude, had hidden his face in the cloudless sky. That had been the greatest day of his long reign—the day of the eclipse.

Both Harl and the Sword had a mystical significance in the minds of the People—the Sword perhaps more than he who carried it. It was a symbol of power reverting toward its original function.

Harl sighed. He was old now. His hair was gray and much of the strength gone from his muscles. Nalla had long gone back to the Sun. Her children were grown men and women now and other women had taken her place. Easy living had made him fat, but there was no one in his entire domain who cared to face the Sword. He smiled happily at the sheathed blade that made his reign secure. He had taken the Thunderbird for his totem and the sacred US as the symbol for his tribe. In the language of the People, the word for the symbol—and the Sun—was Arn, and Harl's empire also took the name of Arn. Copies of the talisman were in every house in the forest, faithful delineations of the original. And under the wings of the totem and the sign the People of Arn lived happily and were reasonably content although there were occasional mutterings about the Sacrifice of Virgins. There were no wars or tribal struggles in the forest. It was under one rule, and Harl's justice was administered by scores of faithful headmen, who applied their lord's simple rules of behavior and code of conduct for the People. It was better now than it had been in his youth. The People were united and they were at peace. The forest was theirs to the very edge of the deserts to the north and the grassy plains to the south. The Arn empire was already great. So Harl dreamed of the sword and the power it had brought him and as he dreamed his heart stopped—and the dream became endless.

He seemed asleep when his second son, named Arn in honor of the Sun, approached. Curious, the young man looked down at his father's face. There was something strange about its stillness—a majesty of repose that rested with odd propriety upon the heavy features. Arn shrugged and bent to shake the old man's shoulder—and at the touch he knew!

It surprised him that the Dark should take his father. Like the rest of the People, he had thought Harl indestructible—the lord who would live forever. But the Dark had come and borne his father's spirit away on its shadowy wings. He sighed and took the sword from its place around his father's waist.

Then he called the guard . . .

Arn lifted the sword and stared at its polished length. Harl's body had been taken to the burning, and

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with the end of the sacrificial rites and the ashes given to the Sun, Arn would be free to act as he wished. He was master because he held the Sword.

There would be changes. For one thing, sacrifice of the People would stop. Animals yes—but the People were needed for other things. He smiled as he thought of the hot envious glances his brothers had flashed at him as he entered the Great Hall with the sacred blade buckled around his waist. But they would do nothing; they couldn't. And the sense of power that coursed through his veins was a thrilling and delicious thing. He revelled in it. He stroked the scabbard. "Now, beautiful one," he murmured to the blade, "we will soon see if your magic is still strong. There is work to do . . ."

Lord Arn rode across his broad acres. The horse was something he had acquired during the wars with the Plains People—in the terrible battles that had been fought before the Forest People had conquered. Those had been bitter years. At times he thought the magic of the Sword could scarce stand against the arrows and fearful charges of the horsemen of the plains. But the Thunderbird talisman had given him the answer. Great shields were made like the one that covered the Bird's breast, and thus protected, the spearmen of the forest with their bristling phalanxes of meteoric iron-shod spears met and overthrew the power of the loosely organized plainsmen who opposed them.

And with peace, Arn learned more of the significance of the Sword. The branch in the left talon of the Bird was not what Harl had thought. It was a sign of peace. Thus the Bird symbolized either peace or war. The answer had come to him when the plainsmen chiefs had come to his tent. It was their custom to offer a green leafy branch as the sign of peace and fealty. He realized then that the Thunderbird was a bird of prophecy. For did not the left talon grasp a branch? Before his birth it had foretold this victory!

He could still feel the chill that had swept through his body when the chiefs of the plains people had laid the leafy boughs before him and knelt to kiss the Sword and swear eternal fealty. At that moment, Arn feared and hated the Sword. For the power it had brought him and the glory that he had won on a hundred bloody fields seemed not his at all. The plainsmen, like the People, swore allegiance to the Sword rather than to the one who wore it. The words of fealty were on their lips, but their eyes and hearts turned to the God-metal. As the fierce, sharp-faced warriors pledged their faith, Arn became thoughtful. To his introspective mind, it suddenly seemed that the Sword was alive—that the magic in that shining sliver of metal represented power too great for man to control. For a moment

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he wished that he could rid himself of this shining metal incubus and even now, years later, that feeling occasionally returned. For he feared the Sword with all the superstitious fear of his race. Yet his knowledge of what would happen if he destroyed the blade was sufficient deterrent. For it, more than anything else, held his Empire together. Arn shrugged his wide shoulders and lifted the horse to a brisk canter. Such thoughts were not worthy of a Lord. He was a child of the Sun, favored, powerful, chief of many tribes.

But he was growing old. The Sword still whispered of battle and conquest but his spirit was dry. He wanted to rest and enjoy his gains. There was land beyond the plains and there were People in the land. His warriors were eager for conquest, but he was reluctant. The bloody wine of battle no longer appealed to his taste. He was old, and the old wanted to consolidate the gains of youth, to rest and dream in the sun. Now he understood the strange inaction of his father Harl in the years before his death. Like his father, he had wealth and power enough. He was secure, replete, satisfied with what he had gained.

But was the Sword satisfied? He thought not.

The blade seemed to reproach him with a job unfinished. But he could do no more. His ancient years were upon him and he wanted peace—peace to watch the villages grow into towns and the fertile land along the edge of forest and stream become farms and gardens. After him, his sons could fight among themselves for the sword.

His sons! He snorted.

They were a worthless lot—soft, pale-handed and weak, living for their women and the pleasures Arn had carved for them with the Sword. Rather than entrust the blade to one of them, he would die with it in his hand and let chance determine which would rule.

Introspection is a good trait, but not on horseback. Arn never saw the hole in the path. Nor did the horse see it. The beast stepped, stumbled, and fell. Arn was hurled forward over its head. For an instant the sky pinwheeled above him. A bright flash blotted out his vision, as Lord Arn, master of a hundred tribes, lay dead on the ground, his neck broken by the fall!

His guard, horrified, circled the spot where he lay. Their captain, a huge plainsman named Burt, dismounted and bent over the body of his lord. His sharp features were convulsed with sudden grief, for Burt was faithful and the death of his pledged lord was a blow all the more bitter because of its suddenness. He had sworn on the Sword to protect Arn with his life against all enemies, but how could one protect against a hole in the path of a stupid horse?

Burt sighed. He had sworn fealty

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to Arn, but Arn was dead. Slowly he bent and unfastened the blade from the belt of his master. He drew it from the sheath, and sighed with relief that it was still intact. Not even the jarring impact of Arn's three hundred pounds of bone and gristle had damaged that superlative blade. A queer thrill passed from the sword hilt to his hand. His fingers closed convulsively, knuckles whitening from the gripping pressure of his hand. Here was power!—and he held it! He grinned thinly. He had sworn faith to Arn, but he had given no oath to Arn's worthless whelps. He lifted the blade, eyeing the curious engraving with respect. The enormity of what he was about to do was lost in a cold nervelessness that was godlike in its calm. He who held the sword ruled the land of Arn. With steady fingers he buckled the swordbelt over his waist—and then shivered as though a cold breeze was blowing, yet the day was warm and crystal clear . . .

From the Plains to the northern sea, the Arn Empire stretched a full two thousand miles in length and an equal distance from side to side. And yearly its extent grew as the People swallowed border tribes. From across the sea, other people had come with offers of peace and friendship. They were odd, these sea people, but their words and their promises were good. Although they were foreign, the Empire received them with friendship, and welcomed them and their ships. Strangers they might be but they had things which the People lacked and from which they could profit. They knew the sea and a rudimentary sort of navigation, mysteries which were completely foreign to the landlocked folk of the empire. And in contrast to the warlike Arn, they were a peaceful sort who knew little of fighting.

They spent their lives in following a strange activity called trade, whereby one transported something of little value from one land to another—and somehow made the transportation provide them with extra goods and wealth. It was very mysterious, but interesting.

Since there was no need to conquer, the Empire offered alliance which the Sea People gladly accepted, and by synthesis the Sea folk became passable warriors, while the landsmen became adequate sailors, and the water became a highway instead of an impassable barrier. A navy came into being and the Empire leaped across the sea to the shores of other lands.

With the growth of the Empire, its ruler became invested with ever-increasing dignity and power. To the people he was Arn, or the Sword Arn. The names were used synonymously, and it is doubtful that anyone of that time dissociated the Sword from the one who wore it. The two were one, a synthesis of ruler and symbol that was odd but effective. Burt was the first and last of the emperors who was

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named differently from the land he ruled. His son who succeeded him was called Arn, and the next ruler bore the same name. In their two reigns that spanned a full century, the name Arn became synonymous with the Sword, and every succeeding wearer of the Sword bore the name of Arn, or changed his name to Arn on gaining the kingship. The tradition was established with such unbreakable rigidity that even in the days of the Barrack Emperors, when ruler supplanted ruler at intervals that ranged from a month to five years, each took the name of Arn along with the Sword.

The first decades of the Empire under Burt were periods of expansion and conquest, with the Plains and Forest People combining their talents for war to increase the bounds of the empire. Wisely, Burt stopped the surge of conquest before the empire became too unwieldy, and turned his considerable administrative talents toward consolidating what had been gained.

By the time of his death after a reign of nearly sixty years, the empire was a solid, homogeneous unit based upon a hard core of Plains and Forest People, with scattered colonies along the shores of the Inland Sea. And Burt had attained the stature of a minor god. He established the policy of assimilation that unified the Empire despite the polyglot of peoples it contained. Everyone, great or small, conqueror or conquered, became citizens of the Empire and equal under the Law. It was a master stroke of policy that preserved the Empire despite the stresses of splinter groups and castes who wished to advance their causes to the detriment of others. Unfortunately, Burt failed to provide for the granting of citizenship to other than the four races that formed the Empire during his lifetime. But he cannot be blamed for this omission, even though it later resulted in the Civil Wars and the Barrack Emperors. He simply didn't realize that there might be others over whom the Empire would rule.

By any standard, Burt deserved the title of "The Great," and at his death, his body was honored with a ceremonial burning that was unique in the history of the Empire. His spirit rose to the Sun from a two hundred foot high pyre of oil soaked logs that burned for days, and furnished a beacon for literally hundreds of thousands of mourners who purified their bodies in the smoke, and gained merit from this association with the Great King.

And the first of the Arns buckled the Sword around his thick waist and took up the duties of kingship which he held for nearly fifty years.

Under Arn XI the Empire consolidated its conquests beyond the Inland Sea, and the hardy sailors of the imperial navy ventured out into the trackless wastes of the Western Sea.

Under Arn XIV, the greatest of the Barrack Emperors, the Western Land was discovered—a lush jungle

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world that was empty of intelligent life. The discoveries were recorded and an abortive attempt at a colony was made, but Arn XIV was murdered before the project was well established, and nothing further was done until Arn XXV quelled the Civil Wars, established order, and secured the Empire. He published a uniform code of justice that forever abolished the legal fiction of superior and inferior races, and extended Empire citizenship to all within the boundaries of the state, and provided for the extension of citizenship to any who wished to enter the state from outlying lands. Even that would not have been enough to hold the sprawling state together, except for the discovery of a workable steam engine by an outlander named Kossoth, and the application of the known phenomenon of electricity to communication by a Forest Dweller named Orden. The twin discoveries of power and communication tied the empire into a united whole and freed it from dependence on wind and animals. And like similar discoveries of a far earlier day, these began a chain reaction of technology that passed through the steam powered Industrial Revolution to the rocket powered Technological Revolution.

Power, of course, became the foundation stone of the Empire, but the hydrocarbon period was generally skipped for the simple reason that organic chemistry used virtually all of the scanty supply, and controlled every new discovery.

As a result some fantastically efficient developments of steam power plants furnished the available power for small operations. Technology grew up in a stable society that had no enemies, and in an atmosphere utterly devoid of war and conquest that had marked the early days of the Empire, it grew slowly and in harmony with the society that nurtured it. And with it grew the other arts of civilization such as literature, art, history, and, of course, archaeology—for the people were interested in their origins, and wanted to know more about them.

By the time of Arn CXVII, the Empire had endured for a recorded period of two thousand years and had finally covered the earth by a process of colonization, absorption, and conquest. And despite its polyglot of peoples, it maintained internal harmony and order. Its citizens were prosperous and content, and the Empire moved down the years decade after decade, slowly developing, constantly changing, yet maintaining its traditional form, and keeping at its head the twin symbols of Emperor and Sword.

On the whole, the Empire was happy, but there was one thing that bothered many of the People. From the historians and the archaeologists they learned the story of the Sword, and the fact that it was a weapon of Ancient manufacture. They even knew the Ancients, those tall

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slender bipeds so similar to themselves who had once possessed a technology as great or greater than their own. But the Ancients had died — destroyed themselves, the scholars said.

That, of course, was nonsense. No race ever destroyed itself, but from the evidence gathered from hundreds of diggings throughout the world, it seemed to be the case. The theory was advanced that since the Ancients were probably the ancestors of the People, they were much more primitive and less able to cope with the emotional pressures of advanced technology—and since they did not appear to possess a common language, there might have been misunderstandings that could have led to many wars. It was all very vague.

But the vaguest thing of all was the Thunderbird. It apparently was an Ancient totem, existing in many forms, some with two heads, some with snakes in their talons, some with wings folded, others with wings outspread. Their own national symbol was a direct copy of one of these—but try as they would, the People had never been able to break the symbolic phrase on the pennon clenched in their Emblem's beak. It was frustrating. They knew so much yet so little about the Ancients. And like all bits of unsatisfied curiosity, they wanted to know *the answer*. In time it became an obsession of a large part of the population, and school children spent entire vacations digging in some likely looking mound or glassy area for some trace of the Ancients that would give them a clue to the mystery of the Bird's message. Their elders were no better, and in addition to the Emblem cults that rose and fell with each new prophet, there were staid business men whose sole hobby was underwriting scientific explorations into the distant past, and gaunt-faced scholars with ropy muscles made hard by constant digging.

It was an astronomer, however, that reaped undying fame. Focussing his telescope into the northern hemisphere one night, Orrin, the Astronomer Royal, discovered something that had eluded search for centuries. It was a bright spot, circling slowly about the earth and in the telescope it proved to be an artifact! There was no doubt about it. Nature simply didn't make spoked wheels! So under the pressure of the curious, the attention of technology was turned toward space.

It took twenty years, but toward the end of Arn CXVII's reign, the first manned spaceship took off to give the waiting world news of this strange thing that had been circling endlessly overhead.

Arn CXVII, Child of the Sun, Supreme Ruler, Sword of Arn, Emperor of Earth, pushed his thick-lensed spectacles from his myopic eyes, and hitched at the awkward weight of the Sword hanging at his waist. It was a hell of a thing, he reflected, to insist that a modern

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ruler be forced to wear that clattering monstrosity of a bygone age. It was bad enough that his guard carried them instead of efficient projectile weapons, but to ask a busy man like the Emperor to wear a sword was arrant folly. Sure it was a symbol, but it would be just as good a symbol hanging quietly upon a wall under glass. He drew the blade out and looked at it. The Ancients, he mused, had been wondrous craftsmen. It had only been within the past decade that the People had found the secret of corrosion-resistant steel—and the black material of the handle still defied analysis.

He swore softly as he paced back and forth across his private office, ignoring the flashes of color and buzzings of the Communicator on his desk. The Sword was responsible for this attitude of mind, he thought wryly. After all, he had lived with the accursed thing since he was a child, and constant exposure to one of the few intact Ancient artifacts wasn't calculated to help his bump of curiosity which, through some throwback to a primitive ancestor, was larger than needful for the ruler of Arn.

Today he was going to perform the most distasteful task of a long career filled with distasteful tasks. He was going to push the button that would send the "Explorer" roaring skywards to investigate the tantalizing mystery that had hung over the People's heads since the dawn of history. He was bitter. Someone else would discover the secret of the Bird. By rights, that job was his, but emperors today didn't lead their forces as they had done in the past. They were too valuable as administrators. Selected from the entire population on a basis of merit, trained in rigid competition with other selectees, only the best ever attained to the position of Arn, and even those had to be lucky enough to be in the prime of life when the preceding Arn died or retired. Admittedly, he was one of the most intelligent persons on earth, yet his very intelligence prohibited him from doing what his spirit yearned to do. He should have retired last year as he had planned—and then they couldn't have refused to take him—but he had waited too long. His successor was now above the legal age for accession, and he would have to await another—and that would be another year. Like the Sword, he was a symbol of empire and he couldn't be spared.

Actually an Arn was no longer necessary, but there would be one as long as the People dominated the Earth. Arn CXVII groaned feelingly as he pulled his spectacles back into place on the bridge of his short nose, jerked the Sword petulantly out of his way and walked slowly out of his office. The Guard picked him up outside the door, and he instinctively straightened. He was the Emperor, and he would have to look the part when he faced the television cameras that carried

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this historic image and event to the most remote corner of the world. Nearly a billion people would be watching the small gray figure of the Emperor as he pushed the fateful button that would send the greatest scientific achievement of the race hurtling out into the airless nothingness that surrounded the world.

The space station was a treasure trove of technology. Considering the years that had passed since it was placed in its orbit, it was in remarkable shape. Many of the sections were still intact and airtight. The machinery still operated, and the scientist crew of the rocket pounced joyfully upon the artifacts, and burned megawatts of power sending data and photofacsimiles back to Earth, where their colleagues took down every detail, marveling at the technical genius of the Ancients, a skill that was considerably superior to their own in many respects.

From the synthesis of the two civilizations, the ancient and the modern, a space technology was developed in a matter of months. The ship had to wait for the tools to build the tools to build the ship, but the plans were complete long before the first machine tool was built. The entire empire pulsed with the news that the secrets of the Ancients were on the verge of being revealed.

The historians knew better. All that was found in the station were relics of the technology—interesting and informative though they might be. The thoughts of the old people were still obscure, and though they had found a copy of the Bird emblazoned in gold upon one of the books, they still had gotten no farther toward the solution of the message than they were before. It required something more than technology to solve that problem, but the material was lacking. Perhaps on the moon . . .

The lunar base was expected, and it was found, together with even more wondrous artifacts which gave the Empire's technology another boost, but which still didn't answer the problem. For the Moon base too, had been abandoned in an orderly fashion. Much material had been removed and the rest preserved for some future date. It argued unmistakably that the Ancients had left with some destination in mind. Perhaps the planets—.

The people of Earth were stubborn when it came to satisfying their curiosity. They had taken two jumps toward knowledge, and a third was not too much to ask. The two explorations would have been profitable in any event. Much good had already come from the space station and the huge base on the moon. And more was due. The huge, enigmatic base that had been so mysteriously abandoned aroused the People's curiosity about the Ancients to a fever pitch. Even the Government wanted to learn more,

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not particularly because of the Sword and the Emblem, although these did have political significance, but because of the technology that showed itself superior to that of Arn. The state was running true to form. It couldn't bear the thought of inferiority, even though the superior culture had vanished a hundred millennia ago. So the exploration and development of the lunar base progressed until it supported a thriving colony. . . .

Arn CXVIII was young and despite his training and intelligence, possessed much of the enthusiasm of youth. He was intrigued with the possibility that somewhere there might still be living Ancients. From everything he knew or could deduce, they were a remarkably tough and resistant form of life, and it was highly improbable that they had vanished utterly. If they had reached the moon, they undoubtedly had the capability of reaching the planets. So the next step was to go there and find out.

But Arn was anticipated. Astronomers, using the huge reflecting telescope found in the lunar observatory, radioed Earth that there was undoubted evidence of life on Thuja. Enormous domes similar to those on the moon proved that. Thuja was the fourth planet, and it had long been thought that the air blanket of that world could support life. It was dense enough, and the broad green bands that enclosed the planet were virtually positive proof that vegetation existed. It wasn't a much greater step from vegetation to animal life and from that to the Ancients. And now this confirmatory evidence proved what had been suspected, although many scientists had doubted that life could exist during the cold Thujan nights.

So an interplanetary ship was built in sections outside earth's air ocean and, in due time, received its cargo of men and fuel and blasted off for its far destination.

It took better than two months for the ship to reach Thuja, and another month before it decelerated sufficiently to land. It stood beside one of the huge domes, the soil steaming from the heat of the jets, while the crew waited impatiently inside for an opportunity to set foot on the alien soil.

Apparently the Thujans were watching too, for at the precise instant when the instruments told the crew that it was safe to emerge, the huge airlock in the base of the dome opened and four tall thin figures rolled out in a ground car that sped swiftly over the red soil to the ship. One of their number descended from the car and stood beside the entrance port.

He was tall, taller than the tallest crew man aboard the Arn spaceship. He walked easily in the light gravity, his short arms swinging at his sides. His head was huge in proportion to the rest of his body, a hairless spherical cranium that from size alone could be judged to con-

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tain a first class brain. To the watching crew he was freakish, but the relation to the skeletal forms in the museums on Earth was startlingly precise, except that he was completely hairless on those parts that protruded from the garments that he wore. There was no doubt about this being. He was a living Ancient!

The word went out to Earth, and ten minutes later the world was biting its collective nails with curiosity. Messages and directives flowed from the Government offices to the officers and crew of the ship, but these were almost as incoherent and contradictory as the crew's impression of the Ancient.

The first reaction of the crew was a mild shock, that vanished as Captain Afram spoke.

"Well, they're not too different from us," the captain said as he looked into the vision screen that showed the figure of the Ancient.

"Yes," Kandro answered. Kandro was the engineer, and second in authority only to the captain. "They're primates all right, but we knew that from their remains our archaeologists unearthed. Still I don't believe that any of us would have expected them to be so thin and hairless—ugh!"

"Just remember that they are People just as we, and quite probably they're much more intelligent than we are. I don't think that they are nearly as soft as this one looks. Ones like them destroyed a whole world once."

Kandro nodded. "That is so," he said. "Well, then, let us receive them with the courtesy that is their due. After all, they're probably our ancestors."

"I hope not," Afram replied, "but you may be right. Still, I'd hate to think that anything that ugly could be my forebear." He stroked his red hair with smug satisfaction and Kandro, watching him, grinned a toothy smile.

"Well, sir, they have come to us—now let us go to them."

"A good idea. Get a couple of the crew and stand by the main lock. I'll have you covered with projectile weapons just in case they might be violent."

"Me and my big mouth," Kandro said disgustedly. "Probably I would have missed this detail if I'd—"

"You would," the captain said. "Now go get a helmet and get going. You're the biggest one in the crew and should be able to hold your own physically with that fellow, even though you'll have to look up to do it."

"I could break him in two with one hand," Kandro grumbled—but like a good sailor, he obeyed orders and presently the airlock door swung open.

Sub-coordinator George Smith was expecting something human when the airlock door swung open, but the sight of a full grown male gorilla flanked by a gibbon and a baboon carrying guns nearly cost him his sanity for a brief period while his mind tried to digest and

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absorb the incredible message conveyed by his eyes! Smith knew what the creatures were, although he had never seen one before. He was an expert on Earth History, which was why he had been selected for this mission. Although he had never seen the planet of his origin, he knew more about it than perhaps any man in the Domes. And his mind held an encyclopediac amount of information.

The origin of these creatures was unmistakable! They differed but little from their ancestors except for somewhat larger braincases—but physically they were much the same. After all, a hundred thousand years is but a brief span in evolution, even though it is speeded up by intense nuclear bombardment from a poisoned Earth.

As Kandro watched, the Ancient touched a stud on the heavy belt encircling his thin waist. "STAY WHERE YOU ARE!" the thought blasted into the engineer's mind with stunning force—and then more quietly, "You are from a world that is poison to my race. Do not land from your ship until we have established a decontamination station. The radiation carried in your bodies can kill us. For your own safety as well as ours please remain aboard your ship until we are ready to receive you."

Kandro, half paralyzed with the force that invaded his mind stood rigid in the entrance port, his two guards beside him, their weapons drooping limply in their hands. What sort of creature was this who could speak without words?

The Ancient read his thought. A chuckle injected itself into Kandro's mind. "I am speaking over a menticom—a mental communicator—and I had the intensity too high at first. This is direct mind to mind contact, and if you stop withdrawing you will find that it works both ways. If you wish, you may search my mind and see that I bear you no ill will."

Kandro gingerly directed a question at the Ancient, and recoiled with instinctive delicacy from the pictures spread before him—but not before he learned that the Ancient thought the truth. There was amazement and a little shock in the Ancient's mind, but no enmity—just a curiosity as bright and inquisitive as his own. The brief glimpse had revealed a mind incredibly flexible and powerful. It reminded Kandro of the restless sea beating on the cliffs below his home on earth. It made his own quick and agile brain seem dull by comparison, and his was one of the better intellects of earth—nearly as good as Captain Afram's—and Afram was the late Arn CXVII! For the first time in his life he felt inferior, but oddly enough, the feeling didn't rankle. There was no basis for comparison.

"It will only be a few minutes," Smith's voice sounded in his mind. "Our robots will soon be here with the equipment."

Kandro energized his communicator to inform the ship. But it

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wasn't necessary. The Ancient's message hadn't stopped with him. Everyone aboard had heard it!

Minutes later, a truck came from the dome, rolling swiftly on fat tires, bearing two large metallic figures shaped much like the Ancient, and a strange boxlike device. The two set it up easily, using portable force rods to manipulate the obviously heavy box. One of them twisted a few dials on its surface, looked at the control panel and then nodded to Smith.

"All right," Smith said. "Come down one at a time and enter the box. As you pass through the decontaminator, you will be safe for us to associate with."

"And if we don't?" Kandro asked.

"You have two choices. Either leave or—" Smith didn't appear to say anything, but a slim tube on the roof of the ground car swiveled, steadied, and a red dune a hundred yards away whiffed into nothingness!

Kandro grinned. "We can't go home without landing—so I guess we'll go through your box."

"A wise decision," Smith applauded.

As the crew descended Smith took inventory—an Orang Utan, a Gorilla, two Chimpanzees, three Gibbons, two Baboons, and a Barbary Ape! He passed a pale hand across his forehead—unwilling to believe his eyes. Six intelligent species! It was impossible! Only one existed before the Blowup, and the conflict between individuals of that one had nearly destroyed the Earth. And if that weren't enough, these six species had come to Mars in a ship that bore on its bows a gaudy copy of the Great Seal of the United States! It was too much . . .

But there was more. The Orang, whose name was Afram apparently, stepped up to him after passing through the decontamination chamber. "Ancient Smith," the red furred ape thought. "I not you recognize the Emblem on the nose of our ship."

"I do." Smith replied. "The colors are not right, but the design is perfect."

"You know its origin then?" Afram asked eagerly.

"Of course."

"Then you can tell me," Afram was almost quivering with eagerness, "What is the meaning of the message carried in the beak of the Bird?"

Smith looked at the primate curiously. "Why do you ask this?"

In a flashing series of mental pictures Afram told the story of the Sword through his late reign as Arn, and as the tale unfolded, Smith became very still. A fine beading of sweat dotted his brow as the parallels unfolded.

"You don't know what you're asking," Smith said dully. "I'm a descendent of the people who made the original of that emblem you have adopted. Your Sword could have easily been carried by one of

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my ancestors. Such matters are not discussed among us." He shuddered slightly as his thoughts turned inward, and Afram, too curious not to scan, looked into the Ancient's mind.

He was shocked and sympathetic —and appalled! It was like breaking a privacy barrier back on Earth! There was a frustrated hell of regret and longing in the Ancient's mind, a warring emotional complex that Afram could hardly believe. Somehow it reminded him of the famous lines of Quarth, the immortal poet of the Reconstruction Period:

"Fair?
Why—the very skies proclaim this is a place beyond compare!
Bright?
Why—the Sun can hardly vie in radiant beauty to the sight!
Sweet?
Why—the Fields of Paradise can offer joy scarce more complete!
Dear?
Why—no word of tongue or pen can show my love as I draw near!
From my far wanderings on a foreign strand—
To the place of my heart—my native land!"

Smith nodded. "The words," he said slowly, "are written in a tongue called Latin—one of our ancient languages." He read them aloud "E Pluribus Unum—From many—*one!*"

Afram would have stopped him there, but Smith went on, a hell of anguish in his thoughts. "There is a lesson there in those words that is equally good for apes or men. We had our chance to learn it, but we did not." Smith shivered. "It cost us our homeworld! Yes, Earth still glows in the sky, but to us it is forbidden. God, I suppose, is merciful. He gave us this refuge, but it is not Earth—nor will it ever be. So perhaps He is not merciful, but is in truth a God of Vengeance." Smith's thoughts were weary. "We will speak of this no more."

Afram nodded. A wave of sympathy for the Ancient stirred inside him, and with its birth, the feeling of inferiority vanished. He was immeasurably superior to the old one. He had a home. He wondered briefly what it would be like to be forever barred from it. That would be bad, but to be barred from it by his own acts would be undiluted hell! He shrugged—a peculiarly human gesture. The two-thousand-year quest was finished. He had learned the last secret of the Sword—and in reality it had never been a secret at all. But the People wanted to know, and now they would be satisfied. "E Pluribus Unum"—he rolled the strange words in his mind. It was a good motto—an excellent one for the six species that shared the Earth and the greatest nation the old world had ever seen.

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collision orbit

by . . . Lester del Rey

How soon we have manned flights will depend largely on when we master the problem of re-entry.

IN THEORY, there are innumerable orbits which a rocket ship can take around Earth or around the sun. Some, such as the Hohmann orbits between planets, are minimum-fuel, maximum-time orbits; others are nearly straight lines which demand little time but—except perhaps to the Moon—are hopeless in terms of fuel consumption. Nearly all have been treated repeatedly in science fiction.

However, one class of orbit has received scant attention—and that one type of orbit is the only one which men have so far been able to attain in practice. That, of course, is the collision orbit.

Every rocket or rocket ship which man has fired has been launched on a collision orbit. It has risen, circled the Earth for a fraction of a degree or many full circles, and has then headed back to collide with the surface or with the air—which at full speed is just as ruinous to it. This is obviously the ideal ballistic orbit, and will remain the goal of all military missiles. For a study of space, however, it's about the worst possible type of orbit, though there is nothing we can do about it—yet. (At the moment of

Lester del Rey resumes his series of articles on the questions we face in the present Space Age, discussing the problems of re-entry under various circumstances. Del Rey is the author of ROCKETS THROUGH SPACE *(Winston, $3.95) and of the anthology* ROBOTS AND CHANGELINGS *(Ballantine, 35¢).*

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writing, Vanguard and the Explorers haven't collided, but their course is headed for such collision.)

Nor is the permanent orbit where a satellite would be fixed in its rotation for all eternity necessarily the ideal orbit—though later, when we build true stations, it will be desirable. Conceivably, by luck, we might achieve such a permanent orbit. If the satellite were powered by solar batteries, it would then continue sending back information, but nothing which cannot be gained by a number of collision-orbit shots.

The ideal satellite orbit at the present time would be a modification of the collision orbit. It would be modified at the colliding end, not at the take-off, so that the collision was softened enough for the rocket to be recovered intact. We can call this a landing orbit, though my own term for it is "bat man orbit," since the only example I know is a circus performer who was "shot" from a cannon and then glided down on bat-like wings. Eventually, he missed and landed in a true collision orbit on his head, with the usual results.

With such a modified collision orbit, we could begin to get back some of the information we vitally need, such as the real effect of space on life. Animals could then be returned after a week or so in space for study. The effects of meteoric erosion could be measured precisely. And a host of things could be learned by direct study.

This, of course, brings up the whole problem of re-entry. It's a problem which neither this country nor any other has really solved, and there is a good chance that it will not be solved fully for some time.

But to see where we're going and how long all this collision orbiting will go on, let's look at a schedule of coming events in space. In spite of some of the wild schemes to get newspaper headlines, this schedule is one of reasonably steady progress, and has already been pretty well laid out.

In the March 1958 issue of *Bulletin of the Atomic Scientists,* this is outlined in an article entitled *Astronautics and the Future,* by James B. Edson, Assistant to the Director of Research and Development, Department of the Army. The timetable for progress from now until 1962 covers six steps, the first two of which have already been achieved: The first primitive rocket represents Sputnik I and the United States' satellites. The flight of Sputnik II satisfied the requirements for a satellite with a payload of from 100 to 1000 pounds. Both stages have involved straight collision orbits, though it would have been of great value if Sputnik II could have been returned intact, and ideal if Laika could have been recovered alive.

The *third* step is the sending of an unmanned vehicle around the unseen side of the Moon and back toward Earth. This would have a tremendous propaganda value, and would help to confirm our scientific

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ideas about the Moon. Tiny television cameras could return invaluable pictures.

Here one of the problems is that some of the most valuable shots would have to be stored on tape and played back, since no radio transmission can be made while the Moon lies between the vehicle and us. It would be much better in many ways if we could recover actual films showing the other side of the Moon. At best, television information cannot resolve the fine detail that a good photo can. But recovery of the films would mean finding a solution to the re-entry problem, and this will almost certainly be another collision orbit if the vehicle returns properly to Earth.

Fourth step is the unmanned crash of a vehicle against the surface of the Moon. Probably this will involve the use of an atomic warhead to explode against the surface. Propaganda-wise, such a spectacular demonstration of the landing would be valuable. Scientifically, it is one of the most worthwhile uses for atomic bombing. The volatilized stuff spewed up from the Moon's surface would yield an enormous amount of information about the composition of the surface when studied by spectroscopes. The formation of the resulting crater would also yield a good deal of evidence about the whole problem of lunar craters. This, obviously, must be a collision orbit, though not against Earth for a change.

The *fifth* step is the "re-entry and recovery of satellite equipment and biological specimens." This does not necessarily involve a true landing orbit, but only the finding of some way to preserve some small part of the satellite through the high heat of the collision orbit. Photos or tapes—both subject to fairly easy damage through high heat—are needed for a better study of both space conditions and Earth's surface. And sooner or later, we must find out the biologic effect of space. This doesn't necessarily mean returning live animals. The biological specimens may be nothing but yeast cells, plant spores, or perhaps even a few small insects. Study of the results of cosmic radiation and other mysterious radiation we've already discovered would be easier from such specimens than through slower-growing higher life forms.

This may still involve a collision orbit, but by now we're going to have to solve some of the problems of re-entry.

And finally, we have further biological readings to determine whether men can survive in space, and the selection and training of men to make the trip up. This step will go on within the time, but is actually only a bridge between the work of step five and the later manned flights to come after 1962.

How much after 1962 these manned flights will be, and how successful our preparations will be probably depend mostly on how well we can master the difficult

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problems of re-entry for our satellites.

To most people, the mention of re-entry as a problem seems ridiculous now. The man on the street apparently feels that this is one of our great secrets, and that only the Russians are unable to achieve such successful re-entry. After all, didn't President Eisenhower show a nicely-pointed rocket nose section as evidence that we had the answer to re-entry? Of course he did, so that's that!

Unfortunately, it isn't. Re-entry is no problem at all under some circumstances. If you'll limit your rocket speed and height, then the heat of friction through the air can be met very easily by ceramic nose-cones of some reasonably streamlined shape. Most ballistic shots are within the limits of such height and speed, and we have solved the re-entry problem for them. It would be impossible to have ballistic missiles without such a solution, because a bomb that burned up before striking would be useless. Since the Russians are designing ballistic missiles, it can be pretty well assumed that they've solved the re-entry problems for such nose cones.

Whether this solution is good enough for the recovery of delicate instruments in either case is another matter. It's a lot easier to design a nose cone that can stand the impact of a collision orbit from reasonable speed than to design instruments or living creatures to stand the same impact.

In any event, re-entry from a true satellite orbit is a different thing. We can't possibly have solved this re-entry problem fully for anything as large as the nose cone shown on television. We haven't yet put anything that big into a true orbit around the Earth, so there is no possible way in which we could have demonstrated such a solution. (Nor did the President claim that our re-entry solution applied to orbiting satellites at the speed of re-entry such satellites must have.) Obviously, the Russians have as yet not solved this problem, either, since both Sputnik I and Sputnik II disintegrated on colliding with the denser layers of Earth's atmosphere.

The problem of gentling such a violent collision orbit into a safe re-entry is a formidable one, since it involves more than the mere re-entry and recovery of the casing. To have any value to us, the re-entry must be one which permits us to recover the contents of the satellite intact. It will do us no good to use ceramic casings that can stand temperatures of thousands of degrees Fahrenheit if such temperatures get through the casings; life, films and tapes are destroyed at a very few hundred degrees. Even recording wire loses its magnetic message when heated to a fairly low temperature. It will also do us no good if the contents can be protected from the temperature only to smash in collision with the surface of the Earth with such force as to ruin everything inside. And finally,

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it will be useless to effect a safe landing unless we can track its location—which becomes harder when we don't have the visible glow of a burning vehicle to guide us.

There are certain hard and fast laws of physics fighting against us here. The one that gives the most trouble is the fact that every bit of energy spent in getting the mass of the satellite up and to its orbiting speed must be thrown off in getting it back to a low speed landing. (This isn't as much total energy as needed to get it up, because much of that is wasted in lifting the various weights of early stages and fuel, but it's still a lot of energy.) The only way this can be thrown off is as heat. And that's a lot of heat.

This is exactly the same problem as that which worries the designers of automobile brakes. It takes about the same amount of energy to stop a car as it does to get it up to speed. We put 300 horsepower engines into our cars to get us to 60 miles an hour in ten seconds—and then we have to have brakes that will stop us in less than half that time. This means tremendous amounts of heat, all of which must be bled off into the air if the brakes aren't to become red-hot or worse. (Sometimes, brakes do become almost that hot.) And here, of course, we have some rolling friction to help us, though it represents only a tiny bit of the total heat expended in stopping a car.

Now consider the type of brakes which could be used to stop a car going 18,000 miles an hour!

There is only one kind of braking that would matter in such a case—the resistance of the air itself. On the surface of Earth, such a speed would be unthinkable, since the air may be considered as acting as a true, noncompressible solid at such speeds. But even in the attenuated air miles above the Earth, such speeds involve collision with an unthinkable number of molecules, each acting as a solid body of resistance.

Such resistance has to produce heat. Heat, of course, is simply the motion of molecules; the faster the motion, the higher the heat. And bouncing molecules off at high speeds means turning them into hot molecules, with the heat spread between air and rocket.

(Actually, one may think of a rocket traveling at 18,000 miles an hour as already being hot; the molecules within it already contain the heat of motion, but since the motion is uniform for the rocket, there are no effects of heat. Nevertheless, the energy of its acceleration to speed does lie there already as potential heat. When the uniform motion is resisted, the motion becomes the actual heat of random molecular motion, with unhappy effects.)

Streamlining—if such a thing could exist for such speeds—would be of no help. In fact, streamlining would only make things worse! If we could find a way to streamline

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our vehicle perfectly so that it had no air resistance at all, this would simply mean that it would lose no speed in falling. Then, on impact with the surface of the Earth, it would have to release all its potential heat in one burst as its speed was reduced to nothing in microseconds. The vehicle and much of the surrounding land would immediately become white-hot gas!

Rather than trying to streamline our vehicle for the descent, it should be made to have the maximum amount of resistance, so that it would lose all its speed in air; and it should have the maximum amount of surface for weight, so that it could dissipate that heat into the surrounding air most readily.

Obviously, this offers problems on the way up, where rockets should be designed to give minimum air resistance. The load can't be too bulky or rough shaped, even when surrounded by a protecting false rocket nose, or the carrying rocket will be forced to displace too much air.

How about insulation, then? That is one approach that will be tried, unquestionably, but it presents its own problems. First, it adds weight, which is always a thing to be avoided in rockets. And second, insulation just isn't efficient enough. If permitted to fall normally, the returning satellite will reach temperatures high enough to leak through anything we have. One of the best insulators would be a vacuum inside a double shell, with the outside of the inner shell silvered to a high polish. But heat would then leak through the supports and separators by convection, and at white-hot temperatures, too much of the radiant heat would find its way through. Then the insulation would simply hold the higher temperature inside, increasing the damage it could do. There may be some kind of a solution here, but it's a difficult one, and still not available to us. The odds are that the larger the satellites we send up, the better chance an insulating scheme will have to work; here the fact that weight increases faster than area (tending toward a cube-to-square ratio) means that the relative area to be insulated and to leak heat will be less.

The real answer, however, will almost certainly involve control of the time required for the descent through the atmosphere. Again, to take an example from automobile brakes: It takes as much energy to stop a car from sixty miles an hour speed in ten seconds as it does to stop it in four seconds; nevertheless, the brakes don't get as hot under the slower deceleration, because they have more time and more air against which to dissipate the heat. If you bend a piece of coat-hanger wire back and forth rapidly, it can become too hot at one point to hold; but if you do it slowly, you can continue until the wire finally breaks without enough *accumulated* heat to feel.

The worst time factor is the in-

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stantaneous braking, as in the case of striking Earth at full speed and volatilizing. This is impossible through our air, but might happen against the surface of the Moon. The descent of Sputnik I and larger meteors has proved to be far more gradual. Temperatures were high enough in the case of Sputnik to turn it into a glowing ember, but apparently it was believed that some parts may have reached Earth in a still-solid state.

If we could control the time of descent properly, the same total amount of heat would be released, but it would be so gradual a release that the air would dissipate it. This would mean that the satellite would have to drop slowly in its circular —or properly, spiral—orbit, so that it would lose speed at such a rate that its fall to denser air would leave time for the heat of resistance to bleed off by radiation and convection.

By the time it reached the lower atmosphere, it would have to be moving not much faster than a jet plane; and even jet planes can pick up more heat in the cabins than is wanted, since the best design hasn't completely solved the problem of air resistance at such speeds.

This would demand a very gradual descent, involving a slow spiral around and around the Earth, and taking up a great deal more time than the final dip of Sputnik I into the atmosphere. It would probably require some kind of wings and controlling mechanism to keep it at the proper level without dipping too low into high resistance and heat, or rising too high where it would lose support and drop back too abruptly. Such a guidance system seems extremely difficult to design within the limits of extra weight we can afford.

It isn't a hopeless problem, though, and we'll get back to it eventually. First let's look at other possibilities, in case this one has to be dropped.

If we can't succeed in extending the time during which the heat must be dissipated, our second best chance is to increase the surface from which it can be removed; but in this case, we must do it in such a way that we will not increase the resistance of the vehicle itself to air too greatly—or the slowing will occur too suddenly.

One way to do this might be to use some form of ribbon parachute; its purpose here would not be so much to slow the fall as it would be to serve as a heat loss unit, though it would reduce the speed in the higher levels of the air.

This would have to be made of metal mesh, thrown out behind and capable of much greater air resistance at high altitudes than the vehicle, which should now be somewhat streamlined. In this way, the metal mesh would grow hot long before the vehicle, but it would have a great deal of surface from which to radiate the heat.

It would certainly add to the total weight. Every means of gain-

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ing practical re-entry seems to have that trouble. But study might show that the added weight would not exceed what was permissible for later and heavier rockets, even when the ejecting mechanism and its controls were included. Designing something to be light and to act at extreme heights without excess strain at lower levels isn't a problem that can be settled overnight, but there have been ribbon chutes in use for other purposes, and some of Wernher von Braun's first proposals for his three-stage rockets called for the return of the first two stages by such chutes. So it seems to be a possible solution.

Such solutions, of course, become effective only after the satellite has already begun to fall. While in the upper part of the orbit, their effectiveness isn't worth considering. We'd still have to wait for the slow decay of the orbit of the satellite to bring it back into the atmosphere.

For some things, this might do. It wouldn't matter too much with some instruments or with tape. In the case of photographic negatives, the delay might or might not prove disadvantageous; we know that film emulsions can be effected by cosmic radiation, and too long an exposure to such radiation in space might ruin the film. According to the latest figures, this seems unlikely, however. But while it might not matter to instruments and photos, it certainly would matter in the case of living things.

Part of the trouble is that we'll want some way to control the duration of exposure to space. Part of it comes from the fact that even such low life forms as yeast will need food in which to grow, and conditions suitable for life maintained, if we're to get them back alive where we can learn most from them.

In the case of living animals of more complex form, such as mice or monkeys, we want to be able to control the period in space for both scientific and humanitarian reasons. Whether the Russians had hopes of returning Laika or not, we can be pretty sure that they'd have preferred to do so; even as propaganda alone, that would have been worth doing. Besides, Russians can get as sentimental about animals as any other people can—as a quick reading of their literature should show.

Here we run into a really tough problem. If the satellite were to point in exactly the same direction along its orbit at all times, the problem would be simple. Then, when the vehicle was up for the right length of time, a small blast against its direction of flight would slow it enough to bring it spiraling down almost at once. This could then either be done by a timing device or by a signal from the ground. The latter might be preferable, since it would permit some attempt to have the final landing take place where we wanted it. (It wouldn't do much good to get a satellite containing a monkey back to Earth neatly and safely—only to have the beast

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drown in some part of the mid-Atlantic. Or in some part of the Brazilian jungle—as in the case of Sputnik II, apparently—where even radio signals to guide us would do little good in recovering the vehicle.)

Unfortunately, the satellites so far don't behave that well. They tumble erratically in their orbits. Even the spin imparted to Explorer can't keep it from changing its aspect to its orbit. In fact, the gyroscopic effect should tend to insure that it might point straight up on one side off the Earth and straight down on the other—though there are other factors involved.

This means that firing off such a blast isn't anything simple. It could probably only be done by ground observers who were able to estimate precisely the motion of the satellite, predict precisely that part of a second when it would point in the right direction, and then trigger it. So far, I haven't heard of any observations of the fast-shuttling, tiny objects in space being that precise in detail.

Much of this problem was bothering me while Laika was still alive, of course; and while the rumors of her safe return were thick, I tried to figure what possible chance there was for such a blast to slow the vehicle, and for some form of ribbon chute to be designed to bring her down. (I'd have liked to see live recovery, of course, but even a body in good condition would have been scientifically valuable.)

As far as I could determine, it was a theoretical possibility; and it's possible—though improbable—that the Russians had planned on such a trial. The fact that their transmitter went dead just when the rumors said the attempt was due might be significant—or might not. But the chances for it working were highly doubtful.

Re-entry is a big problem, and I'm afraid it will be a tough one for quite a while. We may crack it enough to get some results back in time, but the complexities of setting up further controls and devices on top of those which have already proved unreliable in the ascent make me skeptical of any large amount of success.

Certainly the problem has very little to do with the military warhead re-entry problem. A couple thousand degrees mean a lot less to a hydrogen warhead—which is triggered into fusion by millions of degrees—than to even the toughest living cells. With all due respect to the difficult job the military services have already done, it will take far more than a picture of a nose cone in good condition from a limited ascent to convince me that anyone has solved it.

In the long run, the simplest method of attaining proper re-entry will probably be by means of some form of wings or fins to contort the rate of descent, along with some guiding device to make it work properly. So let's see what will best answer our needs here.

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We'll need a fairly good-sized rocket for this, since the control devices will be of about the same general complexity regardless of the carrier, and since the weight of such a device will be a lower percentage of the total in a larger rocket.

If we assume that we can send up a satellite somewhat bigger than any yet used—one of about five tons or so mass, such as the one the Russians have mentioned repeatedly—then we might do the job. We could allow perhaps one or two hundred pounds for the controlling device, capable of taking in all the data and feeding the results out to the wing controls. There would, of course, have to be energy available for the control to work on. But if we add another fifty or so pounds for this, the control still takes up little more than 2½% of the total weight. Even with a cabin and necessary conveniences for our experimental animal passenger or passengers, a five-ton satellite should be adequate.

The controls are going to be tricky. They'll have to be able to maneuver the returning ship at the first touch of resistance into a flattened spiral. They'll have to put the ship into a top-up position for which it was designed. Then they will be required to keep a constant watch over the temperature, anticipating a bit, and make sure that the returning ship stays at the upper limit of its ability to gain airlift—it must never descend into denser atmosphere than is required to keep it in a flattened glide. It will also have to be able to avoid trying to maintain too much height, since this would lead to a stall—and a stall would send the ship hurtling down into the very density we must avoid.

Some measure of insulation and air-conditioning is going to be needed for the animal passenger on such a descent, since a certain amount of heat will have to be met; it would probably be best to enclose the controls in the same section, to make sure that too much cold from space or heat from the descent won't wreck its functions.

(On that, of course, we've found that temperatures up in space are less of a problem than was expected. The measurements of the inside of our little ships would indicate less extremes of temperature than might be found on the Moon or even on Mars—well within our ability to cool or warm the interior. Thus we've already found one big obstacle to space travel, something not worth worrying about.)

There are a lot of other functions our control will need, of course. It should be built to cope with various emergencies. And finally, if we are to have a useable, fully-alive experimental animal for our examination after the return, our control must be capable of landing the ship by itself in a maneuver not unlike the landing of a plane. It won't be too difficult, since it can be given a landing speed no higher than many planes already have.

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Ideally, the control should also be able to adjust its final glide pattern and direction to bring it down where it is wanted. This could perhaps be handled to some extent from the ground, but it would be simpler if the device could bring the ship in on a beam.

It sounds like a pretty tough set of requirements for an autopilot. But it isn't impossible.

In fact, both the Russians and we are already fortunate enough to have working models of just such a controlling device!

This device is usually referred to as a human being.

Man fits the needs almost exactly. He can weigh about 150 pounds. In ten days of observation, he will use only about 30 pounds of oxygen and perhaps 20 of food; water can be reclaimed, or it can be added, at an outside amount of 40 more pounds, bringing the total to no more than 250 pounds, which we allowed for. He certainly can be given the training to handle the ship as well as any machine—and he's a lot more reliable in emergencies.

Of course, he will require somewhat more weight to make his environment suitable for him. But we lose nothing in this, since he serves as the best possible experimental animal himself, and we can now combine both animal and control in one unit.

Getting down still won't be easy, and the first few men who try it are going to be risking their lives; some may not make it. They'll be added to the list of collision orbits. But the chance of a man bringing the ship down intact is a good deal better than any other method that we know.

Obviously, we're going to try to patch up some kind of re-entry solution before we send men up. We'll want to get information to lessen the risk to human beings. But we'll be exceedingly lucky if we can find any solution that will do the job with any consistency, or well enough for fully meaningful study of whatever comes back from space.

So the final answer that will solve the problems facing us in steps three to five of our development—the re-entry solution that can change a collision orbit to a safe landing orbit—will come only with the development of step *seven* of our progress into space: "Satellites of 5000 pounds payload" . . . to be put up between 1963 and 1967, according to the schedule given us.

Inevitably, we're going to need rockets built to carry up men—and men to carry out the job of bringing the rockets back.

Until then, we'll have to be content with what we can learn from collision orbits.

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golden age

by . . . Lee Priestley

With love banished from the world, he had said, its great sorrows are no more. Gone, too, are its uncountable joys.

CRITO sat down on a marble bench near the doorway of the Judgment Hall and stared unseeingly at the wine-dark sea and the mountain trailing a banner of cloud across the purple sky. He had come earlier than his accusers or defenders . . . should there be any of those, men being loath to join themselves with the foolhardy.

He must think what to say when he stood before the tribunal. He drew an ivory tablet from his robe and poised his gold stylus above it ready to note any useful ideas that might occur to him. But none came. The stylus drew only meaningless scrawls.

Should he forego all defense? Throw himself on the mercy of the court? "I can scarcely deny my own words when they are repeated to me," he said aloud. Then he glanced hastily around for possible listeners. The carelessly spoken word had been his downfall and he already knew to his cost that walls have ears.

He dropped his head into his hands and let his thoughts go back. How had that conversation begun . . . in surprise that the boys he was accused of debauching by lead-

"Living in a perpetual Spring time you miss the sharp challenge of the elements. Never cold, how can you appreciate warmth? Never hungry or athirst, how savor food or drink?" Oklahoman Lee Priestley, author of THUNDERING DEATH *(June 1958 FU) explores an interesting possibility.*

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ing their thoughts to dangerous areas had seemed so flatteringly interested in what he had to say? How often did youth listen to any citizen of Crito's advanced age?

He had spoken idly to a tanned, beautiful youth sprawled on the marble beside the swimming baths. "This beats work, eh lad?"

"Does it?" The boy had folded his arms under his head and looked seriously at Crito. "Perhaps a man would enjoy all this—" his gesture included the limpid pool, the murmuring music, the drifting fragrances, all the opulent climate of ease and indulgence "—more if he had to sweat a little to get here."

Crito had returned the look with lifted brows. "Why should anyone work when there is no necessity?"

"It wasn't always like this, was it, sir? Long ago, when you were young?"

Crito's smile became something wry. Doubtless the boy thought him contemporary with the discovery of the wheel.

"No," he said, remembering, "it wasn't always like this. Life wasn't a soft, slothful summer afternoon." He looked back into his own past and that of his race, not noticing that his listeners had grown in numbers. "When I was a boy in the Golden Age . . ."

Summoned into a private room, Crito stood before the Tribunal and listened to a repetition of the words he had spoken beside the swimming baths. He was mildly gratified to hear that he had made out a rather convincing case. A better qualifying word was condemning . . . Crito listened with a growing horror.

"No," he had said, "living wasn't easy. Life wasn't secure, but it was joyful and free past any conception of today. We worked hard, so our leisure was doubly sweet. When we were weary and grimy, rest, a bath and fresh clothing were pleasures unknown to you who are never tired and always clean. Living in a perpetual Springtime you miss the sharp challenge of the elements. Never cold, how can you appreciate warmth? Never hungry or athirst, how savor food or drink?

"So much has been exchanged for security. I sorrow for young men. You have missed so much." He had then quoted as much to himself as to his audience, the words of a wise ancient, " 'No wars to wage, no tyrants to put down, no alliances to consolidate . . .' Many things in my time were neither pretty nor easy but glorious all the same. Suffering you do not know, but neither can you know the soaring capability of the human spirit under stress. With love banished from the world, its great sorrows are no more, but gone, too, are its uncountable joys."

There was a pause in the recorded words and Crito remembered that he had stopped then to search the faces of the youths who ringed him round. They were listening, but no young eyes gleamed, no

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young faces glowed. He knew sadly that he was talking of things they could not envision.

"Many things in my world are better gone. Insecurity and pain, wars and want have disappeared. But it is strange that joy has gone with pain and freedom thrives not with security. Now conformity brings rewards. It is not desirable that any heads should stand above their fellows. And so with no rewards for excellence, there can be no great ambitions." He quoted again, " 'There are no great men since Agememnon.' "

His recorded words stopped abruptly then and the Chief of the Tribunal spoke to Crito. "You are accused of your own mouth, Crito. You have corrupted our youth by inciting to rebellion. Have you any defense?"

"Surely my offense is not that great," Crito protested. "It is a common fault of old men to sit in the sun and dream . . . to philosophize of the days of their youth."

The Chief quoted surprisingly the ancient sage that Crito had evoked earlier. " 'Philosophy is action getting under way.' "

"My words are simple truth."

The Chief's voice was tinged with sadness. "Truth like a sword, Crito. It is not desirable to place edged weapons in the hands of the young. Those years in the 1950s when you and I were boys we now realize comprised the greatest Golden Age the world has ever known. But today in 2050 we cannot have citizens mourning lost freedoms and pleasures. The first essentials now are discipline and obedience in thought and deed to authority. Citizens must do only as they are told. Human nature is only tolerable under strict control."

There was a pause and the men of the Tribunal rose. Crito saw the negative, common gesture they all made as the guards took his arms to lead him away.

As he looked down at the thing, a curious chill crept down his spine. It could only have been used by someone—or something—taller than Man . . .

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man-made ufo

by . . . Ivan T. Sanderson

What do we actually mean when we talk of UFOs? Are they unidentified, or can we guess at their origin?

IN PREVIOUS articles we have discussed the general possibility and the degree of probability that there may be objects dwelling in or entering our atmosphere from outside that have not yet been caught or examined, and which have therefore not yet been identified, described, or even explained. In these discussions, we put forward four basic propositions as to what at least *some* of them could be. We also analyzed cursorily the behavior of these so-called UFOs as described by those who have seen them or allege that they have seen them; and this in conjunction with what has been published about the observation of these things by radar and certain other mechanical devices such as motion-picture cameras, and so forth.

In each of these five previous articles we have mentioned at the outset that there are four basic suggestions, or categories of possibility, but we have so far dealt only with three of them. At the same time, it was clearly stated that the fourth would have some time to be tackled even though it may perhaps not properly fall within the purlieus of Ufology. In fact, if this unpleasant

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subject warrants an airing—and in our opinion, it most certainly does—it should be pointed out that it ought to be regarded rather as an outcrop of that underlying strata of *Science-Fiction* that permeates the whole basis of our culture, not only as the modern fairy tale but as the very lifeblood of our imagination and thus the sparkplug of our hypothecation in matters technical and in many scientific.

This fourth rather ominous possibility is—to cut the guff—that *some* UFOs (at least to us, the ordinary, or common public) are man-made. Let us proceed.

First, it is altogether manifest that not *all* UFOs have been made by human beings—unless, of course, human beings have been around for much longer than the sciences of anthropology and zoology believe, and have been greatly more advanced technically than history would give us to suppose. If you can prove that human beings, more or less identical to ourselves, *and* genetically related to us however far back, dwell on other planets in our solar system, or on other "astronomical" bodies or satellites thereof, no such positive assertion can of course be made. There is no evidence of this that I know of, though it is alleged that manufactured articles were dropped out of the sky into the seas in Cretaceous times (or perhaps teleported into the deposits laid down below those seas at a later date; see *FU*, May, 1958). Be that as it may, history, since first recorded, is literally stuffed full of ufological reports, and the Bible—a very excellent treatise, whether you regard it as Holy Writ or not—is full of "sightings." As we have constantly pointed out, Mr. Kenneth Arnold, stout soul that he is and defender of integrity that he may be, was not by any means the first to sight UFOs, and lenticular-shaped ones at that. If you do not believe this, please go to a library and read—not the works of the estimable Charles Fort—but the Proceedings of the Royal Society of London for the middle decades of the last century. They believed in the unknown in those days!

Unless, then, *Men* (and presumably also women) have been around for a very long time and working with a very high degree of technology, not all UFOs can be man-made. But still, can some of them be so? The answer—and it is irrefutable—is Yes. The vast majority of UFOs *are* manmade.

Here we run into a slight semantic mess that must be eradicated forthwith. Unfortunately "readers-digestism" has so influenced our reading habits that the essentialness of the "qualifying" word or statement nowadays tends to be missed and thus entirely ignored. This is a very dangerous tendency and is going to get us into a lot more trouble than we have already experienced on this score with the Communists in the U.N. Those persons, and particularly the Russians, lay

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more store by the qualifying word than, sometimes, they do by their general statement. We must learn to watch out for and pounce upon qualifying statements, otherwise we are literally doomed. Likewise, when I say that *some* UFOs *could* be *man*-made, I do not mean either that all of them are, that I *think* all of them are, or even that they are necessarily made by *Man*. (It could be women or machines, for instance.) In this case, however, *Unidentified* is the "qualifying word."

It may surprise you to know, and it ought to thoroughly alarm you to hear, that hundreds perhaps thousands of *unidentified* objects pass through our much vaunted radar defense screen every day and night, are duly reported to Air Force filter centers and are never heard of again or—as far as the spotters know—identified. Likewise, dozens or even hundreds more are reported daily and nightly by moonwatch teams (a silly title if there ever was one), weathermen, military and civilian airfield personnel including radar operators and others in the control tower; hundreds more by military and civilian, both company and private, pilots; and dozens more by startled or bewildered citizens in all walks of life, of all ages, in all parts of the country, and often in very large numbers—*vide*, Levelland, Texas, in November last.

This is alarming, especially when it shows that at least one aspect of our national defense is either inadequate, lackadaisical, or so fiendishly secret and clever that it knows everything in advance or can deduce it immediately from the slimmest data given by a harrassed amateur sky-watcher. I don't believe the latter and I horribly suspect the former. If I am right, literally thousands of *unidentified* things are buzzing back and forth over our national borders through our best planned defensive spotting schemes and screens. What are they, we would like to know?

Now, here is where the semantic matter comes in. Just because these objects are *not* identified does not mean that they *could* not be identified. Moreover, to be simply rational one may feel fairly confident in saying that the great majority of them could be identified if they were photographed close up; or may, indeed, actually *be* identified if our Defense organizations *are* really alert and frightfully advanced in their methods and superlatively efficient in their coordination of all reports of every plane and balloon in the air and its exact position at every instant. This also I doubt. It is also only reasonable—and I sincerely hope that I am not wrong—to suppose that the very great majority of similar reports from all the other sources listed above, and from primitive tribesmen, worried astronomers (and there are a few now), and others, are similarly of objects that *could* be identified if only the spotters had had the means

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or the instruments to bring them into adequate focus.

So what might these UFOs, but potential IFOs (Identified FOs), be?

First of all there are today a very large number of military, commercial, and privately owned planes cruising about our skies at all altitudes, twenty-four hours a day, and 365 days a year. Although most military planes are on training or scheduled flights and nearly all commercial planes run at appointed times and on prescribed routes, the exact whereabouts of a high percentage of these is not precisely known at any one moment. Winds and other meteorological factors necessitate almost minute to minute deviations from the best planned procedures and all manner of other hazards call for complete changes of plan. Actually, few planes carry radar and many neither follow radio beams nor even keep in constant contact with the ground. Military planes wander about or dart all over the lot. Private planes constitute a web of confusion so extensive and so great as to be a real menace. They come and go at will and often on mere impulse, while the number of "private" pilots, although properly licensed, that are irresponsible or really incompetent is extremely alarming. I know personally of several cases of idiots stealing or "borrowing" planes and flying all over the country without logging an hour of flight or being stopped by anyone. Then, the number of planes that have and still do disappear altogether verges on the fantastic but is never mentioned either officially or seriously in print.

Then, we have quite a lot of largely financed organizations who spend their whole time hauling into position, inflating, and launching balloons of all kinds, from small but very efficient spherical jobs for meteorological purposes to monstrous aerial zoophytes for cosmic-ray and upper upper atmosphere research. These things go up and up and sometimes don't burst on cue; they mount into winds of all manner of velocities even into the jet-streams, and may go rushing merrily back and forth all over the place. You should see some of the Air Force tracings of identified balloons. Some go straight off to places like Paris, France; others often mill around towns like Milwaukee as if they couldn't resist its smoggy emanations. Many of these lighter than air jobs may whisk across radar barriers or get in front of an astronomer's distantly focussed telescope.

So also may birds. Migrating birds are a damned nuisance to almost everybody. They are supposed to have set "flyways" and to stick to them and to a respectably tight schedule twice a year but they are lousy navigators and often wander all over the lot. Sometimes, due either to loose otoliths or something, they foul up their readings of the Coriolis Effect, or Magnetism, or whatever they use to find their way over long distances and

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may be quite clearly seen in binoculars ploughing happily along in the wrong direction to the hysterical discomfort of their breathren who are stolidly heading for their seasonal promised land. Also, some birds fly frightfully high—the Lammergieir of the Himalayas has been encountered wheeling amiably around half a mile above Mount Everest, oxygen deficiency or no oxygen deficiency. Birds can sometimes, at low levels, reflect light from the ground, even as Ruppelt hath it, anent the "Lubbock lights," in his book.

All this is very disturbing to a dedicated moonwatcher or CD chappie but then along come also the shooting stars, bolides, proper meteorites, ball-lightning (if it really exists), tectites (if they do), pieces of half-burned copies of Sunday newspapers from furiously belching incinerator shafts in skyscrapers, gliders out of control, hail, assorted bits falling off planes (and they do), and now—so help them—these hunks of crystalline ice such as have been peppering eastern Pennsylvania for the last six months. If you add to this Charlie Fort's galaxy of rains of blood, seeds, coke, fish, frogs, *et alia* you may wonder why the average conscientious skywatcher does not give up heretofore, and the sincere Ufologist tomorrow. Isn't this enough to explain all the UFOs actually seen and reported?

Perhaps it is, but then comes the real rub. Exactly what planes are those planes that make up a proportion of these UFOs-might-be-IFOs? Where do they come from, and *could* they all be accounted for? If lots of unidentified and perhaps unauthorized planes (or balloons, or other objects) are riding high over us, often in plain sight but positively unidentifiable and even more positively unstoppable, who is to say that some of them are *not* made by man? And, if they are man-made, just what men made them?

This brings up another whole question.

Any engineer can tell you that it takes literally *years* to get a new form of plane into the air from the time that it is conceived in rough on a drawing board. Further, you don't have to be an engineer to realize that, however desperately the Russians may be working, technology advances only just so fast. The mad, or sane, scientific genius working alone in his attic (no, that's artists) or cellar (that's better) just does not exist any more, if he ever did. Today, technology is a collective affair and mostly advanced by teamwork. Great strides are made but nothing can stay really secret for long, even behind an iron curtain, and, what is more, humanity seems to have a sort of corporative mind so that all its thinkers sort of move along together throughout the world, none ever getting very far ahead of all the others. Actually, an entirely original idea is probably impossible: new ideas come

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from chance discoveries made while building up old ideas. Thus, a whole new concept of aerodynamics or of propulsion is extremely unlikely to crop up spontaneously and suddenly and quite secretly, some where, and then be developed to efficiency without the rest of the world getting at least an inkling of it. Nonetheless, there is something that can mitigate against this and, in fact, possibly counteract it. This is plain stupidity.

The principle of the rocket has been known for thousands of years. It is alleged that some person in China discovered it. Perhaps it was the Pekin Ape-Men, *Pithecanthropus sinensis,* for they had fire and one of them may well have stuffed a hollow leg-bone of a wild horse with something and set light to it after it had dried or just hit it with a stone, and it "went off." It can be done, you know. Anyhow, the Chinese were setting off rocket firecrackers in early days; the ancient Greeks used rockets to smear their maritime rivals with a primitive napalm; the British used rockets to attack Indian ports in the seventeenth century; and A. Lincoln was much concerned with new developments in rocketry during the Civil War. Nevertheless, prior to the first world war no one but a single gallant Frenchman—why is it always a Frenchman?—ever thought of or tried to apply rocketry to the propulsion of a vehicle. This delightful bloke built a rocket, invited a lot of savants to take a day out of Paris, climbed aboard the thing wearing a top hat and tail coat, grasped a pair of reins, lit the fuse and roared into the sky—for some hundreds of yards—turned several somersaults and then blew up. It was all over in a few seconds. The savants are said to have shrugged their shoulders, looked at each other, said *"Eh bien, mon vieux,"* and returned to Paris. True rocket propulsion was shelved.

During World War II, our Allied intelligence became increasingly alarmed about this business, however, because the idiot and apparently otherwise rather dumb Nazis had become deeply interested in the matter and were known to be toying with the very sound mechanical principles pioneered by the German Rocket Society of which none other than Willy Ley, known to all sciencefictioneers, had been secretary. The next thing they knew was that they had on their front doorsteps not only the V-1 or buzz-bomb, a jet-engined device paralleling the jet-engine of the Britisher, Whitted (another case of parallel thinking, it seems), but also the V-2, a genuine, fullblown rocket of horrible proportions. But worse was suspected to be about to come. Luckily Patton broke through, and we got there just in time. What was really going on we, the public, do not know to this day, but there is a wealth of information lying around in the open for any discerning person to pick up, read, digest, and become thoroughly alarmed

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about. It comes in many languages, and in many ways, and from all sorts of odd places, and it has to do with quite a lot of different horrid ideas but it all adds up to one major fact.

The Germans were, by the end of the war, quite far advanced along a very new line in an old, old field. The old field was rocketry (and jet propulsion if you will); the new line was aerodynamics. *Some*—and this is a fully qualifying word—of the results went swiftly to the other side of the Iron Curtain.

A great deal has been written about this, a lot of it hogwash, some of it calculatedly misleading, and a lot more of it hysterical. But there are some stories that I don't like. These concern the oft-called "V-7."

This holds, for me at least, a rather special interest because I got some of it firsthand, entirely by chance, from an engineer who was working in Germany during the war. Further, I have substantially the same story from magazine articles in three languages, and a semiofficial confirmation from a source that ought to know what it is talking about, unless it was trying to be deliberately misleading. The V-7, it should be explained, is said to have been a lenticular shaped airplane, with a revolving (or circulating) flange around its edge, that is alleged to have been able to take off almost vertically and then to whoosh through the sky at any angle, banking and making turns that would defy any winged plane. It is also sometimes alleged actually to have flown before the collapse of Germany. Now this is what came to me.

It so happened that a lady living in Connecticut had a cage-bird that she had brought from South America and that she loved very much. She was German and had emigrated to this country via South America with her husband, an engineer.

She had recently had a baby, and the bird not only kept it awake all day by peeping but became very jealous of its arrival and started attacking the child's eyes. The lady gave the bird away three times but each time the recipient brought it back because it made too much noise and they could do nothing with it. Then, this lady heard of my little private zoo and that we were kind to our animals and made pets of them all. After much trouble she obtained my firm's phone number and I happened—and I mean happened, because it is a rare occurrence—to answer the phone myself. She poured out her woes and begged me to take the bird. I agreed to do so most gratefully and we made arrangements that she should drive into New York the next day to deliver it. She duly appeared with her baby, the bird, *and* her husband who had no idea who I might be. We exchanged pleasantries and housed the bird. Then I started to excuse myself as I had to leave for a radio show later.

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The lady asked me whether I was going to talk about animals. I replied no; and added that, curiously, I was going to talk about "flying saucers," and went on to explain rather hastily that I did not believe in *all* that sort of stuff but that I did feel convinced there are some truly unidentified objects floating or flying about in our atmosphere. The result of this statement was startling. Her husband said simply, "I know there are. I worked as an engineer at a factory outside Munich which supplied the engines for the V-7."

In the conversation which followed, this engineer then told me about a fantastic plane developed by the Germans. These planes were powered by eight engines, each representing an equivalent of 5,500 HP, arranged around the circulating flange at an angle of variable degrees to the lenticular axis of the plane, and two on the upright tail structure. The former engines were used for lift and propulsion, the two latter mostly for steering and stabilization, just as the little propeller at the side of the tail of a 'copter keeps the body from turning contrary to the rotation of the blades. He further said that the prototype had been flown and that it carried enough of its "special fuel" to fly around the world. Further, the speed was developed in short boosts after which kinetic energy took over. The perfectly designed shape of the plane permitted it to cut through the sky and to float like a violently thrown disc. This allowed it theoretically to not only coast but to maneuver for an indefinite time without appreciable loss of speed. Hitler inspected the prototype; the first two official test flights (not the first plant tests) were made in his presence. These test flights took place over the Baltic Sea, and test reports revealed that these "flying saucers" had reached an altitude of 20 km (12.5 miles) within 16 seconds, equal to an uplift speed of 2,800 miles per hour. They were designed so as to cruise at an altitude of 40 km (25 miles). More of these "saucers" were completed and there was a whole factory full of parts for still more, including a considerable stockpile of their special rocket tubes.

Now, here comes the interesting part. When the War was over and the Allies—up to that point military friends — regarded each other as brothers, a Russian detachment, suddenly and as if from nowhere, rolled up to the factory with a large supply train and empty heavy transport. They marched straight into the factory premises, loaded up finished V-7 parts, as many essential parts as they could, took other parts out of every unfinished engine, emptied the drafting offices of all blueprints, and, to cap all this, herded all the technologists they could grab into closed trucks, and then left for an unknown destination. This was under the Reparations agreements. The Russians had already got the V-7 plants, while combing East

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Germany. Now they had the engines and the brains needed for the developing of these flying machines.

This story, if true, is sad enough but this man's account of what followed is even sadder. He tells me that the Americans went around looking for anything that resembled military machinery but seemed totally disinterested in anything else, and least of all in the great pile of rocket tubes designed for this alleged V-7. Then, they told the factory to get back to work making any damned thing they liked as long as it was not a plane or a piece of military equipment. They did, and this is where even the new German management got its big shock.

As there was no new steel available and little scrap, they simply cannibalized their own stockpiles including the engines for the V-7s but when they came to the rocket tubes they found to their amazement that no conventional methods could be applied for melting them down; only when employing the greatest heat and the best furnaces they could get—and they had the best—were they able to master them and to reshape this mysterious metal into blocks for gasoline engines, so badly needed at that time. Even when my friend left, years later, there was still a considerable number of rocket parts lying on the "scrap pile."

Now, this is but one of several almost equally hair raising stories that I have been told but it is one of the best in its field and it should suffice to make several of my points clear. There is confirmation of a sort from both sides of this picture. First, Vladimir Sjabinski, who was with the Russian occupation forces, describes the 20 kilometers long tunnels in the mountain six kilometers north of Nordhausen that sheltered the surviving factory for the assembling of the V-2. He counted more than a thousand machines for the production of V-1 robots. "The store-rooms were filled with reserve parts for the rockets, special steel, copper plates, and extremely complicated instruments, intended for radio-steering." (Literal transl.) Everything that could be moved, and the workers and engineers who'd been employed at the plant and who were still in the district, were sent to Russia by the NKVD. The author quotes the Russian police major who supervised this as stating that the Americans had left behind "an almost complete set of blue-prints for the V-weapons, and in addition to this some drawings of larger rockets, among them the inter-continental A-9/A-10." Most of Germany's leading rocket research people had left Nordhausen with the Americans (who had first occupied the area), but by "combing" East Germany, the Russian police, Sjabinski adds, were able to locate some experts. Others were kidnapped from West Germany.

Manufacturers, be they governmental or purely commercial, customarily number their products

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serially and the Germans are perhaps the most pernickety people on earth in this respect. So here we have rocket devices No. 1 (the Buzzbomb), No. 2 (the V-2), and Nos. 9 and 10 (on the drawing board). What happened to Nos. 3, 4, 5, 6, 7, and 8? Perhaps they were all duds; perhaps not. A young American recently returned from Germany says, it is alleged, that, he was shown a lenticular-shaped "plane" or aeroform on a Czechoslovakian airfield, that had a continuous series of rectangular ports around its periphery, each containing in its mouth a moveable and vertical vane. The plane also had a vertical flange (at one side, as he put it), which formed triangles above and below the periphery. From these, he said, two cannon-mouths protruded.

This description fits almost exactly that of my engineer friend, if we suggest that the two "cannon-mouths" on the "tail" fins are rocket vents, and if we consider one other point. The frontal air-intake vents on the V-1 contained a series of vanes, like a venetian blind that automatically controlled the amount of air (oxygen) going into and needed by the engine. It is quite possible that a similar device was found necessary to control fuel consumption in this V-7—at least for its main peripheral engines but not for its guiding tail jets.

Unless this and the considerable supporting evidence for it that I have seen is all a tissue of lies or a deliberate propaganda plant, it means that technology did take a considerable jump in Germany during the last full war. Second, it would indicate that the Russians were aware of this and of its potential, and that they got there first. Third, they being agile, aggressive, in *some* respects terrifyingly open-minded, and constantly pushed on by the threat of imminent disaster from within, would not have sat on such a choice morsel but have put the metallurgists they seemed to want so much to work along with their own excellent engineers. Two years later they *could* have been maneuvering in formation around Mount Rainier, looking for a plane they had inadvertently downed thereabouts two days before, to see if there were any possible survivors. They would have been plainly visible to Mr. Kenneth Arnold. And, *his* "flying saucers" banked and twisted at incredible speeds and *skittered* through or *over* the air, just as my friend says the V-7 did.

But, everybody will say, if the Russians or anybody else have had such an efficient areoform for over ten years, why don't they either keep the things a dead secret in their own territory, attack us now, or, alternatively, why do they bother to send up Sputniks with rockets and make intercontinental ballistics weapons? These are good points but they are not good enough in a world of cold war or in an all out fight to conquer the world. There could be a dozen reasons why they don't use them

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offensively; they may be much more useful for reconnaissance, for propaganda, or for intimidation. They may have inherent deficiencies or limitations. They may need some special very rare something to make them go, so that their number is limited. They may just not want to use them yet, except for exploration. As long as the western public scoffs at UFOs, why should they worry? They can come in over our radar net by day or night, high up or low down, do what they will, including shooting down planes with irksome people in them, and flit off again either *unidentified* or just because nobody can catch them. Presumably, also, they could land almost anywhere; and this brings us to another alarming point.

Let us go back for a moment to the events at the end of World War II in Europe. As I mentioned above, a great deal of *baloney* has been written about what we found or what some people said they found inside Germany after its collapse. Until recently, however, most of this was obviously platitudinous and not very informative though, there were a number of most curiously detailed articles in foreign (to us) language magazines, and notably in South America. Recently, however, all sorts of bald statements have begun to appear, almost all, if not all of which seem to most fully confirm both my engineer friend as quoted above and the said esoteric Latin-American articles.

Take, first of all, what one Ulbricht von Rittner, allegedly a former officer of the Technical Services of the Wehrmacht, says in two chapters of a book, VIENEN LOS PLATILLOS VOLANTES, the rest of which was written by Enrique Miguel Borges, published in the April-May 1958 issue of *Saucer News,* edited by James Moseley of Fort Lee, N. J.

In this, Von Rittner tells us that there was a "Joint Intelligence Objective Committee" — presumably jointly "Allied"—that was empowered to "gather all products of German science and take them to the United States." This, he says, resulted in 1500 tons of secret papers being taken to and then sold in the U. S. to any bidders at the price of $1 per sheet and which, he also asserts, were snapped up by the Russians. Among these papers were complete blueprints of a 52-ton rocket, itemized the A-4, and devised to travel at 6000 m.p.h. He further mentions another device, also calculated to go at 6000 m.p.h. (named the A-10) and far enough to have carried a two-ton load of TNT from Germany to New York in thirty minutes. Most significant is his statement that, among over a hundred separate designs for pilotless missiles, two—the V-8 and V-9 (he probably means the A-8 and A-9)—were *lenticular* in form, which is to say "saucer-shaped" to all us benighted idiots who believe our Press and who have either never looked at a saucer in a kitchen or who cannot describe its shape accu-

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rately. Then, after a lot of very interesting observations, Herr von Rittner gets back to these particular two devices and blandly gives us specifications for them that exactly coincide with those given by my engineering friend. These include a peripheral flange, powered by jet (or rocket) engines set at an angle of 45 degrees, whirling around a central lense-shaped cabin, housing the main power control unit, fuel and so forth, the latter being specified as "oxygen, alcohol, compressed air, peroxyde (sic), and hydrogen."

This information—if true—is, to say the least, "informative," but it brings forward several further worthwhile ideas. Von Rittner himself points out that many of the designers of these two particular "missiles" *did* get to the U. S. but that others were grabbed by Russia, and he seems to feel that both parties have most probably continued their researches and should have developed at least workable examples of these machines. Further, this development *should* (not could) have been very rapid in view of the facts that, not only the plans for them but much of the engineering research on their construction had already been done but also because both the Russians and the Americans were extremely eager to get them into the air and had enormous technical and industrial resources to back up and put into effect their desires. He seems to feel, in fact, that one or the other, or both, had them in the air by 1947 — hence Kenneth Arnold's shock.

Herr von Rittner as quoted by *Saucer News,* says a lot else, much of it most interesting and apparently sober but some of it manifestly as far off the rails as everything else that has ever been written about this loathesome problem—by which I mean UFOs, *not* guided missiles. He, like almost everybody else, falls into the bottomless pit of illogicality when he starts—as he does—talking about "*The* Saucers" as if they were only one kind of thing, though he does admit (as herein quoted at one point) as saying that, if "they" are proved to be above a certain size, "then, the extraterrestrial theory of their origin must be true after all." (Note: I would point out that the *theory* of their origin is *not* extraterrestrial but entirely *terrestrial;* and that he does not specify just which or what "theys" he is talking about—Author.)

Other evidence of a confirmatory nature comes from an entirely different and altogether more impressive source. This is the well respected British magazine entitled *FLYING,* the official journal of the Royal Air Force, published rather naturally in London. In its issue for June, 1958 (price one shilling and sixpence) is an article entitled "Rocket Arsenal," being an account of the investigation by British Intelligence of Hitler's surface and underground factories for the manufacture of these "V" (as we call them) or "A" weapons.

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This also is a rather sad story of complete initial misunderstanding by the Allies of the extent and importance of German rocketry—and, I suspect, a basic misunderstanding of the importance of anything that we, on our side, had not already thought of, which seems to be the chief characteristic of our dying civilization. However, after the usual bungling, with Americans dashing about and missing the point, and the British doing nothing, somebody actually got moving and sent a team to have a second look. And what they found then has to be read to be comprehended. This was the team that asked the first *intelligent* questions of such outstanding scientists as Wernher von Braun, now our greatest standby, and who alone seems to have at all appreciated just what was going on. And here again we read of the same "missiles" numbered one to ten; of the same radio controls; of the same things that fell on Sweden; and again of the endless trains of machines, parts, experts, and even workers that meandered off east into Russia.

To sum up, there is just so much published evidence now that the Germans had both blueprinted and built experimentally, lense-shaped guided missiles before the end of the war that it is perfectly useless for any government spokesman or retired general to try and convince anybody that there never was such a thing or, what is even more idiotic, that neither we ourselves nor the Russians have carried on the experiments, made the damned things, and flown them. Further, if these devices are *not manned,* they could do anything Mr. Kenneth Arnold's first "saucers" did.

Take it as certain that 75% of reported UFOs *could* be IFOs and that 99% of those that are, are man-made.

NEXT MONTH—

We have a rendezvous with Fear in
Stanley Mullen's story, LET THE DREAM DIE

Our chances in Space are discussed in
Lester del Rey's new article SURVIVAL IN SPACE

We enter the Palace of Medusa in
Clark Ashton Smith's SYMPOSIUM OF THE GORGON

Steve Vannevar fights to save a burning world in
Lee Chaytor's exciting novelet OPERATION DISASTER

and

We meet the extraordinary Boliver Chadwick in
William F. Nolan's LAP OF THE PRIMITIVE

—in FANTASTIC UNIVERSE

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be my guest

by . . . Damon Knight

Another age had a word for it—possession. What would be done in this day and age to exorcise these visitors?

The room was quiet; the man in front of the mirror was the only living thing there, and he was too horrified to utter a sound.

In the mirror, five faces stared back at him: one young and ruddy, which was his own, and four that did not belong in that place at all, for they were wrinkled, malevolent, small as crabapples and as blue as smoke.

This is the way it happened:

AFTER the funeral, the only thing that occurred to Kip Morgan was to go out and get boiled. It was one time when he didn't even want to see Angelica MacTavish, but she was there, looking open to suggestion, so he drove her down Sunset to a bar he knew that wasn't really a bar, but a chop house. It was quiet and dark; the wallpaper didn't yell at you because there wasn't any; there was old black paneling instead; there was a jukebox, but nobody ever played it; the waiters wore black jackets and gold-rimmed spectacles; and if a man wanted to get quietly, darkly drunk in there, the management would serve him and leave him alone.

Damon Knight, called by Anthony Boucher "the most analytical and the most entertaining of the critics of modern science fiction," here explores a disturbing and unusual subject—the reason for those empty faces and those empty eyes that you must have seen so often. Knight is the author of HELL'S PAVEMENT *(Lion, 1955) and* IN SEARCH OF WONDER *(Advent, Chicago, 1957).*

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"When I was a kid," said Morgan to his scotch-and-water, "nobody died. Except my Uncle Austin one time, and he fell off a ladder. Now all of a sudden they're dying like flies. I must be getting old."

Angelica watched him and listened calmly. She was one of those slim, compact young women who wear collegiate sports clothes and next to no makeup, not because they want to particularly, but because they look like overdressed dolls in anything else. They have structural-steel spines and muscles like a cat's, and when they are pretty, as they usually are, it would stop your heart to look at them. When they're intelligent as well, it's a great pity, for then they're too good for most men and they know it.

After a moment she said, "You liked him a lot, didn't you?"

"Old George? Sure. He was—" Kip's square fingers tightened on his glass, trying to squeeze expression out of it. "He was worth a million of me." He frowned and tried again. "He was the kind of a guy—it made you feel good, just to know that he was alive."

"I never met him."

"No. That's right." Kip blinked at her. "You were at the funeral, though."

"Yes."

"How come?"

"You asked me if I wanted to go. Last Wednesday."

"*That's* right. Sure. He was only forty-six, the obituary said. Cerebral hemorrhage; that's a filthy thing. He should have lived to be a hundred and ninety."

"What's going to happen to his work now?"

"His work?" said Kip.

"Didn't you tell me he'd discovered a new vitamin?"

"Oh, that. I dunno. Nothing, probably. It was his own private thing—he didn't have a grant. He had a couple of graduate students working with him, one time or another, but they weren't much good. Head of the department had all the hotshots tied up on a cancer project. . . . I washed bottles for him sometimes; so did his daughter, when she could get away from her mother. Except she broke more than she washed."

"That would be the stary-eyed one, who didn't cry?"

"Uh, yeah. Nancy."

"She was bearing down on you when we left. What's the matter with her, Kip?"

"Everything. All—bottled up inside. You ever see a spastic? Like that, only in her mind instead of her muscles. She can't *reach* people—keeps trying, all the time, it hurts you to watch her. She doesn't know how."

He gulped the last of his drink and set the glass down carefully. "I saw her coming at me, back there," he said.

Angelica's eyebrows went up a trifle; otherwise her expression didn't change. "Tell me some more about the vitamin," she said. "If it's as important as it sounds, why do

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you think nobody's going to pick it up?"

Kip shook his head. "Not important. It was a bust. Contra-survival."

She blinked slowly. "A contra-survival *vitamin*?"

"Sure."

"No," she said positively. The waiter came and put down two fresh drinks and took the old glasses away, thinking about something else all the time.

"Kip, what's the source of this thing—where did Professor Liebert find it to begin with?"

"Pig liver."

"Then it wasn't contra-survival for the pig."

"No. Might have been, though, if it had turned out to be any good for people. See, the pig synthesizes this stuff. It isn't anything to him, one way or the other—just a by-product from something else he was doing at the time. Only way it could affect him is if it turned into another reason for slaughtering pigs."

Angelica frowned slightly. "Aren't you using 'survival' in two different ways?"

"Well, yeah, but you have to. Like, take a Jersey heifer that breeds true—short horns and a big udder. Those are pro-survival factors, right?" He paused and added, "As long as the farmer's around."

She nodded.

"Or if you want vitamins, take C. It keeps us from getting skin hemorrhages and pulpy gums, and it gets the lemon cultivated—good for us, and good or bad for the lemon, we don't know yet. Or the L complex—good for you, if you ever have kids and want to nurse them, but lousy for me if it had the same effect on men, which God forbid.

"Another thing L does, we found out, is to break down George's vitamin in primates. He had to synthesize the stuff—took him six years. Got it pure, and the L let it alone—must have been a chain reaction with the natural vitamin and its impurities, and the L. So he tried it on rhesus monkeys."

"And?"

"Well, it's a vitamin. Guinea pigs and rabbits got fatter and grew heavier fur than the control group, rats and mice were more active. The monkeys went into hysteria and convulsions. Last of them died two weeks ago Thursday. . . . George put a poison label on twenty cc's of the stuff and stuck it in his lab safe for a keepsake; he poured the rest down the drain."

Kip swallowed half his drink as if it were tincture of dubious vitamin, then put the glass into the patch of stained light from the tiny window overhead, and watched the ice cubes turn to amber, sapphire and ruby. Angelica, who never spoke merely to break a silence, sat as quietly as he.

The waiter came and went. The old pendulum clock over the archway paused to chime discreetly, and resumed its delicate funeral ticking, and after a long while chimed

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again. The patch of light moved imperceptibly across the table until the corner of it touched Angelica's folded hands.

The hands moved. Kip raised his head as Angelica drew back the forest-green sleeve and looked at her watch.

"Mm?" he said.

"It's two o'clock."

"Oh. Uh—you got a date?"

"Yes."

"Oh. Where? I'll drive you—" He started to get up.

"Here."

He sat down again and looked at her dazedly. "That's funny."

"Kip."

"Yeah?"

"It's *Monday*. Lunch. Remember?"

Kip looked startled, incredulous, then stricken. "Monday," he said. "You've got the afternoon off."

"Yes."

"We were going to have lunch, and then go to the beach if it was nice, or dance if it wasn't."

"*That* Monday," she said, smiling.

Kip glanced at his watch, then craned his neck to look at the wall clock. "It's two o'clock," he said foolishly. He blundered up and looked for the waiter.

"Kip, we could just order here."

"*No*. Not here — someplace where there's a lot of plate glass, and parakeets in cages, and waitresses with Italian haircuts, and flowers all the hell over." He looked at the bill the waiter was holding out, piled bills on top of it, and reached for Angelica's hand. "Come on!"

So they had lunch, with exactly the right number of Martinis, and argued cheerfully about what kind of a day it was, because it was the late-fall kind that always turns out to be whatever you thought it wasn't; and finally Kip said: "Look. If we go to the beach, either it'll rain or it'll be just one degree too cool, but we'll stick it out to show how tough we are. Right?"

"Right."

"And if we go dancing, either it'll be a perfect day for the beach, or it'll rain and we'll wish we were someplace we could sit and listen to it."

"Right."

"And either way, we'll find ourselves eating burned lamb chops with a side of spaghetti and listening to Mario Lanza sing louder than human."

"It figures."

"All right. Let's go to my place and listen to Brahms, and I'll cook us an honest steak."

Kip (for Kipling) Morgan lived in a cottage that went with his job and was more job than cottage—pro shop in the front, living room, kitchenette, bedroom and bath in the rear. There are a lot of country-club golf pros in southern California, and hundreds of them were better than Kip, who had all the style in the world and no tournament spirit at all; but he was pa-

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tient and friendly, he was ornamental, he didn't seduce the lady members, and by and large, they couldn't seduce him; and everybody there liked him, because Kip liked everybody.

The club was a wonderful place to meet people. He had met Angelica there; she played a strong, clean game of golf, because she couldn't help it, built the way she was, and because she took it seriously—which, Kip was guiltily aware, was the way you were supposed to take it.

Angelica worked as a research secretary for a city councilman who was going to be Mayor; she had inherited a lot of money but would not get it till she was thirty; she knew politics from the dirty end up and was intensely partisan about it; she spoke French and Spanish too fast for anybody but a native, had a Master's in sociology, and could sing harmony to anything without a score. Kip was a little frightened of her, because he wanted her more than he had wanted anything in the world since he was twelve.

The sky was a luminous water-agate color when they came up the walk; the air was cool and moist, and there was a little wind in the tops of the eucalypti. It was going to rain.

Kip opened the door and ushered her in with one big hand warmly in the small of her back, where it seemed to belong. For a moment he thought she was leaning back against him; then he realized she had stopped, halfway through the door. Then he got a whiff from inside, and knew something was wrong.

He slid in behind her and closed the door. The venetian blinds were closed, not the way he had left them, but he could see that the wall looked funny, and there was something scattered whitely across the floor. He clicked the wall switch.

Light spilled out from the three lamps, yellow and strange against the watery gray light from outdoors. The multicolored mound on the long table was garbage: coffee grounds, wet newspaper, banana skins, lumps of pale grease, lettuce leaves, seaweed tendrils of very dead spinach.

Eggshells crunched under his feet as he crossed the room. The green monk's-cloth drapes from one of the windows had been nailed to the wall over the couch to form a kind of garland. In the enclosed space something was written in red smeary letters:

$$\mathrm{LuO} + \mathrm{Vi}_2 + \mathrm{E} \Rightarrow \mathrm{i\ LOVE\ u}_2$$

Angelica was at his elbow. She looked at him as he turned, her eyes wide and alert.

Kip walked over to the leather chair in the far corner. The thing propped up in it was a seat, decorated with a red heart-shaped outline. It framed a piece of brown cardboard, apparently torn from a carton; the red lettering said:

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WILL U
BE MY
VALENTINO?
???

Kip made a face as if he had tasted something bitter. He opened the bedroom door and glanced in, then went around the dogleg past the tiny kitchenette and tried the door that led to the storeroom behind the shop. It opened. He stood in the doorway without moving for a moment, then closed the door and came back.

"Red lead all over hell," he said. "She must have opened a gallon."

"*She?*" Angelica asked.

Kip bent and picked up a scrap of ruled paper; there were dozens of them on the floor, among the eggshells. This one was covered with lines of verse in a precise schoolgirl hand. Kip stared at it quietly and unhappily, then dropped it and went over to the table. Angelica followed.

The garbage on the table was piled into three rough tiers. On the top one stood two little figures made of pipe cleaners and papier-mâché, delicately tinted with water colors, a boy one and a girl one. The boy figure had bright yellow hair, and the girl figure was wearing a long white crepe-paper dress, with a veil.

"*Who,* Kip?"

He picked up the girl figure and tossed it gently in his hand. "Nancy Liebert," he said. "She makes these things."

Angelica looked at him curiously, then went to the couch and sat down, under the garland. "George's daughter," she said.

"George's daughter. She's—got a crush on me."

"I can see that," said Angelica. "Has this been going on long?"

"No."

There was a small silence.

"I made a mistake," said Kip, reddening slowly. "It was last week, after her father died. She found him. She phoned me and I went over . . . she held up all right till the cops and the coroner were all through, and then she let go. She cried. You ever read about people crying buckets, and think it was funny? The front of my shirt was still wet the next morning. . . . Warm tears down my chest—the damnedest feeling. It was like she was bleeding all over me. And she kept saying that she was twenty-six years old and ugly, and the only one that had ever loved her was her father, and now he was dead."

After a moment Angelica said unsteadily, "What was your mistake?"

"I kissed her."

". . . Was that all?"

"No," Kip said. "I told her I loved her—and, God, I *did*—I do. . . . But she took it—the other way."

The rain began: first a tap, then a hammering at the windows, and then a steady scything sound, hollow from the roof, staccato on the flag-

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stones, and the rushing gurgle in the downspouts.

Kip's head turned abruptly. "What was that?"

"What?"

"Sounded like a door closing, in here."

"I heard it. I thought it was a car door slamming outside."

"Maybe," said Kip doubtfully. He glanced at her, then walked around the dogleg again into the hall.

The bathroom door was ajar. It had been closed before. Kip pulled it open the rest of the way and stepped in. There was a steamy smell in the air, and a faint reek of aftershave lotion. The toilet-seat lid was propped against the wall under the medicine cabinet, in a litter of tubes and boxes. Kip's toothbrush lay in the middle of the floor, its bristles oozing a puddle of red.

He stepped over it, glanced at the moist gritty ring in the bathtub, and opened the door to the bedroom.

The bed was rumpled. There were two brown wads of nylon on the pillow, and a gray dress on the floor, draped over a lump that was probably a pair of shoes. Kip walked past them into the L-shaped room, around the corner that had been cut out to form the kitchenette on the other side.

The living-room door was open. He went through in time to hear Nancy Liebert say, "Why don't you go *home*?"

She was standing by the table, barefoot, with a black cloth bag clenched in one red-knuckled hand. Her shoulderblades were like plucked bony wings.

She turned to face him, hunched and awkward, with those big greenish eyes staring feverishly. "Hello, Kip," she said. "Don't *you* think she ought to go home?"

Nancy's hair was red: not carrot-color, and not henna-color, but the real, dark, glossy mahogany red that you see once in a lifetime. She had the pale skin that goes with it, and that made it worse. Her thin face was scarred and blotched and lumped with acne. It looked like something that ought to have been covered up. Her eyes didn't belong in that face, or in any face; they were too large and too bright, and the whites had the yellowish tint of discolored teeth.

"She ought to go home. It isn't right for her to be here, Kip."

"We'll talk about that afterward," said Kip. His hands were curling involuntarily.

She thought about it. "Well," she said confidentially, "if she won't go, we'll just have to pretend she isn't here." She marched past Kip into the bedroom. After a moment they heard the springs creak as she sat down.

"What are you going to do?" Angelica murmured.

He sat beside her, trying to unwind the tension. "Take her home."

"Kip, that girl ought to be in a psychiatric ward."

"I know it. George wanted her

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to get help years ago, but her mother wouldn't hold still for it. You know they were divorced, when Nancy was a kid? She took it as a personal insult. I can't get her into a hospital; it needs a relative."

"Call the police. Have her arrested for malicious mischief. I *know* how it sounds, but it's the best thing you can do for her."

Nancy walked out of the kitchenette, wearing the gray dress, unbuttoned, and one stocking. She was still carrying the black bag in one hand; with the other, she held up a bottle of prune juice.

"Have some?" she said brightly.

"No, thanks," said Kip. "Nancy—"

She giggled and walked back out of sight. They heard bottles clinking in the refrigerator, then nothing but the rain.

When the silence alarmed them, a few minutes later, Kip first called to her and then went to look. A window in the bedroom was open, rain whipping in in gusts over the bed and half the floor. Nancy was gone.

The next morning was bad. The alarm rolled him out at 6:30 and Kip sang in the shower, out of habit, before he remembered. Then he wrapped himself in a towel and padded into the living room to make sure. It was true, all right: there were the nail holes in the wall over the couch, there were the faint stubborn smears of red paint that wouldn't come off, and there was the spot, by the door, where Angelica had said a word to him that would be hard to take back.

He brooded about it while his eggs turned leathery in the pan. After Nancy's exit, they had gone over the business about Kip's calling the police, with all the logic on Angelica's side, and nothing at all on Kip's except the knowledge that he'd feel like the executioner at Golgotha if he did it, without trying all the other ways first.

From that, in some way that wasn't clear to Kip, they'd got onto the subject of his job. Kip didn't see anything wrong with it; he'd tried a lot of things since college, and had fun at all of them—lumberjack, boy's-camp counselor, zoo attendant, merchant seaman—but never a one had been as pleasant or congenial as this. He said so. He pointed out in passing that if he'd been doing any other work, he would very likely never have met Angelica. For no apparent reason, this seemed to infuriate her.

She was silent long enough to count ten; then her eyes narrowed. "Kip, I just remembered something you said at lunch. Did you study biochemistry in college?"

"Sure. U. C. L. A. George was one of my profs—didn't I ever tell you?"

"Then am I wrong in thinking that you did a little more for Professor Liebert than just washing bottles? Were you one of his star pupils, by any chance?"

"Well, he gave me A's, but—"

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"Well, then *why*—"

"Wait a minute. That was just a kind of a hobby—I wasn't majoring in it."

That stopped her for a minute. "What was your major—physical ed?"

"Law."

That stopped her again. Her eyes got big and round. "I suppose you got A's in that, too. Don't tell me, I know you did. Kip, I'm sorry, this isn't really my business—but how could you give that up, or even half of it, for this kind of a life?"

He groped for a way to tell her. "It wasn't like that—not the way you mean it. See, when I was a kid I was a law nut. Skinny little guy with an armload of books. Well, all through high school and college I kept thinking that was what I wanted to do, but the work was getting tougher and tougher. All right, then I went back for p. g., figuring with the football and track out of the way, I'd really hit it. And I got sick. I didn't finish the first semester.

"When I got my strength back I tried it again—summer extension. And I got sick again. *Real* sick—anemia, hypertension, asthma, every damned thing, and a jolt of cerebrospinal meningitis on top of it. When I came out of that, I sat down and figured it out. All those things are psychosomatic, except the meningitis, and by that time I was a sucker for any kind of bug. I was asking for it. I didn't *want* to spend the rest of my life getting hunchbacked and nearsighted over a pile of briefs, but I was kidding myself that I did. What for? Bigger and better lawsuits?

"So I headed north and spent a season logging. I haven't been sorry once."

Angelica's cheeks were pinker than usual. She said gravely, "And you think that wasn't giving up anything? What are you going to do when you can't be a golf pro any more, Kip?"

"I may not wait that long. I've got my eye on a little place up in the sequoia country that I'd like to buy if I can raise the price. A tourist camp, on a lake."

"A *tourist* camp!"

"Sure. I know there's more work in it than most people think—carpentry, plumbing, anything you want to name, but that's all right. I can do anything that—"

"You can do anything," said Angelica hurriedly, getting up, "but you *won't*." She unfolded her raincoat with one motion, got into it with two more. She had the door open before he could move. She turned.

"Why do they give talent to people like you?" she asked, looking at him as if he had a window in his forehead. And then she was gone . . .

The scrambled eggs were brown around the edges and a delicate greenish color in the middle. Kip nudged them off onto a plate, added underdone bacon, and carried the mess abstractedly into the living

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room. Rolls, butter, fruit juice, coffee. The coffee was cold.

He swore at it without enthusiasm and drank the prune juice, which bit him on the way down.

He choked, spraying brown droplets on the already colorful egg, and stared at the empty glass. "Brandy," he said aloud, and then, "Nancy."

That was right: she'd come into the room with the bottle in her hand. She must have laced the stuff with cognac just before that, or else on the way back. Before, probably. Another little joke.

But it didn't fit. Everything else had followed one plain pattern: the toilet seat, the garbage, wedding cake, even the eggshells: love and fear.

What was the symbolic significance of cognac? Or prune juice?

Kip stood up suddenly and walked into the kitchenette. He opened the refrigerator. There was the prune-juice bottle, and there, directly above it on the wall cabinet, was the cognac, but they didn't tell him anything.

He didn't understand it, and he didn't like it.

If it came to that, what about Nancy's exit through the window? That wasn't pattern, either; he had expected to spend the rest of the evening trying to get her home.

Could she have overheard what they were saying in the living room? Very likely; they'd been keeping their voices down, but there was no telling how long she'd been listening at the bedroom door, or just around the corner in the hall.

That reminded him that nobody had answered the phone last night at the apartment Nancy shared with her mother. It was too early yet for anything but a fire or an earthquake; he'd give them till eight, anyhow, before he tried again.

He wandered back into the living room and looked moodily at the wall where Nancy's inscription was still faintly legible. "LuO + Vi_2 + E ⇒ i LOVE u_2." That fitted, but not particularly well, unless you took chemistry to mean stinks.

Chemistry.

Question: Why would you put cognac in a bottle of prune juice?

Answer: To hide the taste of something else.

Kip felt a little odd. The room was blurry and there was a ringing in his head—no, not a ringing, a murmur.

Nancy could have got hold of all her father's keys. She might have found the lab safe combination among his papers.

And George had put a poison label on the . . .

Kip turned to the table, dipped his finger in the little puddle left in the prune-juice glass, and tasted it. Prune. Cognac. And something else, unmistakable now that he was looking for it: the dark oily taste of the vitamin solution.

He whirled and headed for the bathroom. The murmuring was getting louder: tinny little voices, as if a bunch of people were talking quietly at the bottom of a well.

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Sweating, Kip tried not to hear them, but he couldn't help it:

". . . afraid of being poisoned."

"Peculiar. Must be cracking up."

They were talking about *him.* Was this what had happened to George's monkeys, to make them froth at the mouth, and bite themselves bloody, and die?

He skidded on the wet floor, grabbed the rim of the washbowl and found himself staring at his own flushed image in the cabinet mirror. For an instant he thought idiotically that someone had painted little malevolent faces on the wall behind him. Then they snapped into focus, and no matter how long he looked, he couldn't deny what he saw:

Four little men, smoke-blue and as insubstantial as soap bubbles, squatting on his shoulders.

Kip sat in the leather chair with his head in his hands, eyes shut, knuckles tight against his temples. There was one repeated thought in his mind: *A monkey isn't a man.* He had been thinking it so long and so hard that he wasn't quite sure what he meant by it any more, but it was a comforting thing; it was something to hold onto.

Keeping his eyes closed was an improvement, but he could still hear the voices; putting his fingers in his ears, he'd already discovered, didn't help. The sounds weren't ordinary physical vibrations, he was sure, although he was certainly hearing them with his ears; they were binaural and he could estimate their sources with exactness; for example, two of them were still on his left shoulder, but the other two were moving—

He sat bolt upright, with a thrill of pure horror.

One of the two abominable little voices was now coming from the general region of his lungs. The other was inside his skull.

There was a knocking on the storeroom door, and then a hoarse call: "Hey, Kip!" That was Lebeau, the caddy master.

He got up stiffly and went to the door without opening it. "Yeah, Irving?"

"Mr. Chase is out here—says you promised to work him out with his irons this morning."

"Vitamins?" the voice in his chest was saying. *"What the heck are vitamins?"*

"You know," said the voice in his head, *"those chemical things. Blast it, Alfie, try to be a little more help . . ."*

"Tell him I'm sorry," said Kip. "I can't make it—feeling kind of rocky."

"Okay. Hey, Kip."

"Yeah."

"You know who slopped all this paint around the storeroom?"

"Oh," said Kip. The two voices inside him were still arguing about vitamins, and now the things on his shoulder had joined in; he could see them out of the corner of his eye. "I did that myself, Irv — I'll

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straighten it out with the club." He hesitated, then opened the door.

Lebeau looked at him, his sad face all lit up with concern and curiosity. "Hey, you do look beat. You better go see a doctor."

"Think I will. Look, Irv, will you square me with the paying customers, and so on? And about the paint—tell Olcutt I'll talk to him tonight or tomorrow. Okay?"

"Sure, Kip."

. . . That settled one point, anyhow; not that he had been in much doubt about it: the little blue people were visible and audible only to him.

Next—Kip went grimly back into the bathroom, sponged the cold sweat off his forehead, and stared at the two little beings who were still visible on his shoulder. One had a long, hatchet-sharp face, the other was pudgy and shapeless. They stared back at him, and it was pretty hard to take.

"Who are you?" he said to the mirror in the empty room.

They blinked at each other. *"Think we ought to tell him?"* asked the pudgy one. *"It seems only polite,"* said Hatchet-face. *"But—of course—he is not real."*

Kip's jaw wouldn't close properly. While he was working on it, a blue haze flowed out of him and solidified into the other two creatures, the lantern-jawed one with the bristly mustache and the squat sheep-faced one. *"What's this? What's this?"* said Lantern-jaw.

"Talking to us," explained the shapeless one. *"Wants to know who we are."*

Lantern-jaw looked affronted. *"Irregular,"* he said.

"Still—why not?" asked Hatchet-face. *"I am Don Nobilio Hernando San Juan Filippe Salvador Guevara de Cervera y Silva. These gentlemen are Captain Ephraim Goodnews—Major Jocelyn Britt-Howard—and Dr. Alfred R. O'Leary."*

"Doctor of dentistry," piped up the sheep-faced one.

"How do you do," said Kip insanely; and then, "What's this all about? What are you doing here, what do you want? And what do you mean, *I'm* not real?"

Lantern-jaw snorted. *"My dear fellow,"* he said, *"we're dreaming you."*

"You," asked Kip carefully, "are dreaming me?"

"Absolutely. Nothing odd in that, is there? I'll admit this is an uncommonly long dream, but that suits me. When I went to sleep, I don't mind telling you, I was a damn' sick man. Damn' *sick."*

"I also," sighed Hatchet-face. *"We are not as young as we used to be."*

"I can use the rest," said the sheep-faced one. *"Have to be pretty careful—my heart, you know."*

"Spar knocked me into the scuppers," the shapeless one said. *"Worst storm I ever see. Don't know why we haven't foundered by now."*

Kip stared at them all in horror. The transparency of Major Britt-

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Howard's face was splotched and spotted. In Don Nobilio's right temple, just over the eye, there was a tiny, puckered hole. And Captain Goodnews, lumpy, swollen—

"What year is it?" he asked hoarsely. "Not in your dream, but the real year?"

All four looked uneasy. *"Ought nine,"* snapped the major.

"It is the year of Our Lord eighteen sixty-seven," said Don Nobilio.

"Nineteen twenty-one," said Dr. O'Leary.

"Eighty-nine," said Captain Goodnews.

They glared at each other briefly. "You're *dead*," said Kip. He didn't want to, but he couldn't stop. He pointed to the major. "You and Dr. O'Leary died of disease." "You—" to Don Nobilio—"were shot in your sleep. And you—" to Captain Goodnews—*"drowned."*

There was a babble of furious protest, dominated by Major Britt-Howard's *"Nonsense! Nonsense!"* He added, *"Knew it was a mistake to talk to the beggar. Argue with a dream, deserve what you get. Come along, Alfie, Ephraim, Billy-oh."*

All four melted into a blue shimmer that sank into Kip's body and was gone. He heard their voices, down inside, muttering together angrily.

On the subject of survival after death, Kip's attitude had always been the cheerfully pragmatic one of a man who can count on its being a long way away—if it was true, he'd find out about it, and if it wasn't, it wouldn't matter.

Somewhat to his surprise, the notion was now violently repugnant to him. His mind kept shying away from it into sophistries: There was no reason to suppose that his senses were correctly interpreting the new information they were getting. Where Kip saw little blue ghosts, somebody else might see purple beetles and hear them singing barbershop harmony; there was no way of telling.

But that was pure Berkeleian idealism, which could be used just as logically to explain away a ham sandwich. Worse yet, it violated the law of parsimony—it introduced one more assumption than you needed to explain the observed data. And finally, what was his objection to the idea of ghosts in the first place?

That there was no evidence for their existence? Well—hardly. Kip was uncomfortably aware that the case for disembodied spirits was as well documented as the case for meteorites; there was just no place to file it but under "Superstition."

That they were theoretically impossible? No, because you can't say that of anything until you know what the theory is.

True, ghosts were supposed to haunt places, not people; but—Wait!

Kip got up from the couch and paced blindly across the room, avoiding the table by reflex and instinct.

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Sure, there were recorded instances of spirits inhabiting people. There was a common word for it:

Possession.

Suppose the human body were the natural habitat of spectres, and that when they were seen floating around in ruined buildings, it was not from choice but because they had nowhere else to go? If, like the four he'd met, earthbound spirits were those who couldn't bear to give up the pleasures of a bodily existence—or, indeed, even to admit to themselves that they were dead—what other explanation would do?

And that would account for the lugubrious aspect of house-haunting ghosts, compared to the complacency and general snottiness of Kip's tenants . . .

Tenants. Peaceful possession. *Possession,* said the disused legal dictionary in Kip's skull, dustily: *Condition of a person's having such control of property that he may legally enjoy it to the exclusion of all others having no better right than himself. . . .*

"Hell in a bucket!" said Kip.

He wasn't a free agent, he was a piece of *real estate*—to be precise, a sort of private club for four elderly gentlemen. Hot running blood, dining hall, air conditioning, spectator sports; library in the top story, used for smoking in, probably; nobody ever read the books. Warranted of sound construction, desirable neighborhood, cooking on the premises. Plez cnoke if an rnsr is not reqid.

Did they have a lease? And if they did or if they didn't, how was he going to evict them?

Well, how did you evict anybody? By invoking a law. Exorcism . . .

But it depended on what kind of law you were talking about. In jurisprudence, a law was a rule of conduct or action *enforced by a sanction.* No policeman, no law.

Therefore, before invoking a law, consider the sanction. In the case of exorcism, what was it?

Very simple, he remembered. If the exorcism didn't work, the afflicted person was drowned or put to the stake. It was effective—if the tenants won't leave, burn down the house!—but extreme.

There was another kind of law that, in this universe at least, could never be revoked and needed no sanctions, and from which there was no appeal: physical law.

Kip was on friendly terms with at least a dozen doctors, none of whom had ever made a nickel off him. He phoned one at random, a bright young man named Latham who had offices in West L. A.

"You get beaned by a golf ball?" Latham asked in honest surprise.

"No, I'm okay, I just want a thorough checkup. And, Al, I'm in kind of a hurry. Can I get the works this morning, basal, x-rays and everything?"

"When did you eat last?"

"About eleven last night."

"All right, if you want the basal

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you'll have to wait till eleven today. Don't take any exercise, and don't eat or drink anything before you come over. Make it about ten-thirty; we'll get some of the other stuff done first. How about lunch afterward?"

Kip begged off, and dialed another number.

Mike Vitale, a paunchy little man with nervous eyebrows and an inextinguishable grin, was devoted to golf, at which he was very bad, and to sonics, at which he was better than anybody. Kip spent most of the morning at his Westwood laboratory, looking at everything and asking questions, and contriving to get in the way of every nonlethal sub- and ultrasonic frequency known to man.

The subsonics made him feel depressed, happy, fighting mad, sleepy and as amorous as a mink—the latter when Vitale's good-naturedly plain lab assistant, who was used to the gag, happened to pass by. The ultrasonics, those that Vitale would let him try, didn't make him feel any particular way; and none of them, sub or ultra, made any apparent difference to the little blue people. *Buzz buzz buzz,* down there in his chest . . .

"That all there is?"

"That's all I can show you," said Vitale, "except a few frequencies that would set you afire or curdle your brains, little things like that. I tried 'em, and look at me."

"Oh," said Kip. "Well—thanks, Mike."

Vitale put a hand on his arm. "Kip, what's it all about? You didn't come here because you're interested in the work."

"Did it show?"

"Kip, you know what I said to you about five minutes ago? I said to you, 'The resonator coils are built around a core of laminated cream cheese.' And you said uh-huh."

Kip grinned. "You crumb."

"Sure. And you know damn well I don't use cream cheese in there, it hasn't got the right squeak quotient. Pasteurized shoe polish, that's the stuff, right? Okay. Now how many hours did I put in showing you around the lab, because you're a friend of mine and you asked me? Two. What for, Kip?"

Kip hesitated. "If I told you," he said, "you wouldn't even think I was crazy. You'd think I was kidding you, only it wouldn't be funny, Mike. I'm sorry."

He went away from there, feeling about three feet high.

The basal metabolism test turned out normal; so did the knee-jerks and all the rest of it. Kit was depressed. He had had a lovely hunch that something would show up in the basal; if his visitors were parasitic, he ought to be burning more energy than he needed.

Latham fluoroscoped him and x-rayed him from every angle. It didn't bother the little blue men.

Latham, it presently appeared, believed that every M. D. ought to know a little about all the principal varieties of psychoquackery. "Kip,

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what would you do if you found out you were seriously ill?"

"I dunno. Hey, Al, who do you know that has an encephalograph?"

"Why? What do you think it would show?"

Kip sighed. "Nothing, probably." He paid and got away with some difficulty from the lie-down-relax-and-tell-me-all-about-it gleam in Latham's eye. It was getting on toward noon, and he was so hungry he could hardly think straight any more, so he headed toward Olympic and stopped at the first restaurant he saw—which, unfortunately, was entirely paneled in peach-tinted mirrors, suitable for framing upside down in the canopy of a bed.

This meant Waldorf salad and chops with paper panties, followed by jello with carrot strips embalmed in it. It also meant that unless Kip took care not to look up, he couldn't help seeing the reflections of the four wraiths who were now once more squatting on his shoulders, clicking their lips and looking around for the waitress.

As soon as his order was brought, however, they all disappeared inside him again. Kip ate warily, listening to their voices down below:

"Ghastly food." (That was the Major.) *"These Americans simply don't know cooking; no offense, gentlemen, I'm still a bit nervy. The indecency of the fellow, saying a thing like that to our faces! Fellow that said a thing like that ought to be horsewhipped!"*

"Then I take it," said the calmer, wearier voice of Don Nobilio, *"that you are in favor of our looking for another host?"*

Kip spilled his coffee.

"No," said the major reluctantly, but with conviction. *"If I had my choice, of course—but there, one seldom does."*

"I don't see why—" said Dr. O'Leary.

"Well, we shouldn't expect you to, Alfie. You haven't seen what we've seen. Oh, I don't deny there are places that could be got tomorrow, if we decided to move. I've lived in some of 'em. I tell you, Alfie, we were damn' lucky to get this when the last one fell down. Damn' *lucky, even with all the trouble we had. Perhaps you think that was extraordinary, but I can assure you it wasn't. No, you never get exactly what you want; you've got to tinker with it till you get something that suits you more or less. And then if you've made the wrong choice to begin with, the whole thing cracks up and you've got to start over. Isn't that right, Billy-oh?"*

"So I have always found it. But, if we are all agreed that we wish to remain—"

Listening, Kip forgot to chew; and in a moment, when the implications of what the major had just said sank home, he forgot to listen. *". . . got to tinker with it . . ."* Had they been tinkering with *him?*

He lost the thread altogether, then picked it up briefly:

". . . know you can't keep any-

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thing from the Committee, blasted nosy parkers, they've probably got wind of it already. And there's no telling what they'll decide to do, but what I say is, we've got to find out what's really at the bottom of this—even if it means going to that ghastly mobhouse, what's her name, Nancy Liebert—"

Nancy.

Kip started guiltily, looked at his watch, swore, and headed for the pay phone.

There was pure blind selfishness for you if you liked; he'd been thinking of nothing but his own trouble all day. The ringing signal pulsed in his ear, stopped with a click.

"Hello, who *is* this?" Mrs. Liebert's voice, sounding more hysterical than usual.

"This is Kip Morgan, Mrs. Liebert. I wanted to talk to you about—"

"Where is she? *What have you done with her?*"

"Who, Nancy? Didn't she come home—"

"You know very well what I mean. The idea, coming into my house without a word and taking her away— What's the *matter* with you? Why can't you leave Nancy *alone?*"

"Mrs. Liebert—"

"She doesn't *want* you hanging around her. She's perfectly happy here with me, why can't you *realize* that?"

"Mrs. Liebert, when did this happen? I haven't seen Nancy since last—"

"You know when it happened. Just *now*! A few *minutes* ago! I went into the kitchen for a *second*, and when I turned around she was *gone!* How can you stand there and pretend—"

"Mrs. Liebert—"

"This excitement is very *bad* for me, but you don't care—"

"Mrs. Liebert, please. Couldn't she just have stepped out for a minute?"

"*No*, because I looked in the hall, and then I looked out the window, it's right over the entrance, and I didn't see her come *out*!" Her voice sharpened. "Nancy's told me about your *disgusting* behavior, Mr. Morgan. She tells me *everything*, maybe you didn't realize that. Now you bring her right *back*, or I'm going to call for the *police!*"

She hung up.

Kip stared perplexedly at the phone. Angelica had been right, of course, and admitting that, Mrs. Liebert's calling the police was probably the best thing that could happen—if she could be counted on to do it. This seemed a little doubtful; anyone who would accuse Kip of making off with Nancy, while in the same breath saying that she couldn't have left the building—

What *was* the answer to that, by the way?

The more he thought about it, the less he liked it. He didn't quite see Nancy jumping out a courtyard window, or going down cellar to

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cut her throat, but it was possible, he supposed. She might be hiding from some imaginary danger. She might have gone into fugue and be wandering around the building, or on the roof—

The waitress was nowhere in sight. The cashier was talking to a man in a seersucker jacket, and wouldn't turn to look at him. Exasperated, Kip dropped money on the counter and walked out, nearly running down a plump youth who seemed to have his mind on higher things.

The building was on 15th Street in Santa Monica. Kip had never been there and didn't know the neighborhood; the house numbers, as usual, were invisible, so he parked and got out to check.

In the third yard he came to, cross-legged under a lantana bush, sat Nancy Liebert.

She didn't move as he walked toward her. She looked at him or past him, he couldn't tell which. Remembering the cashier and the fat boy in the restaurant, Kip suddenly felt cold. What if those had not been coincidences? What would it be like if she couldn't see him—if *nobody* could see him?

"Nancy," he said, tentatively.

Her head turned a little: toward him, or past him? She looked slowly surprised.

"Oh, of course," she said. "You're dead too, Kip."

She got up. "I'm glad I killed you, Kip," she said confidingly. "Now we can be together always, can't we?"

Kip's tenants were buzzing away inside him; he tried to ignore them. "You didn't kill me. I'm alive," he told her.

"Oh, no. If you were alive, you couldn't see me. Live people can't see dead people, Kip. Mother can't see me."

Some high-school-aged kids were straggling down the pavement, all talking at once, clear treble and brand-new bass. Kip glanced at them, then back to Nancy.

"Look, your mother's worried about you—let's go tell her you're all right." He put a hand persuasively on her arm.

She pivoted away from him and stepped back. "Then you don't know yet. Do you want me to show you, Kip? Look."

She backed down the lawn, keeping her eyes on him. She stepped onto the sidewalk squarely in front of the first group of kids.

A girl and two boys were walking abreast. The girl turned to speak to someone behind her, and at the same moment the middle boy jostled the other one; they staggered wrestling into the gutter. In the next breath a commotion broke out behind them: a tall boy dodged into the street with two girls after him, reaching for a handbag that he seemed to be trying to open as he ran. A whoop went up, and then the whole pack was pounding diagonally across the street. Nancy had not moved.

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It was all perfectly reasonable—a pure coincidence—or was it?

"See?" said Nancy.

"You aren't invisible," he told her. "They didn't see you, but it was because they were all looking another way."

Nancy nodded. "That's how it was with Mother," she said.

Chills paraded up his spine. It was, he realized, a question of definition. A thing that was completely transparent was invisible, like a non-reflecting window; and a thing that was perfectly camouflaged was invisible, too, like a stick-insect on a twig or a faun in dappled shade. And a thing that *nobody ever happened to look at*—

What about the feeling he had often had when he was a child, mostly in dark lonely places but sometimes in full daylight too—that he mustn't turn his head, that something horrible would happen if he did?

A man was coming toward them down the walk, striding rapidly, swinging a brief case; moving a little awkwardly, because his head was turned away as if he were scanning the house-fronts opposite.

Kip moved into his path. "Excuse me," he said.

The man came on, humming under his breath. At the last moment his head jerked down, he darted to the right, stooping, reaching toward something that glittered dully on the pavement: a flattened wad of metal foil. His fingertips spurned it, he straightened, all in the same motion, and walked on. He hadn't touched Kip or looked at him. Another coincidence.

Kip breathed heavily for a moment without speaking. Nancy was watching him with her fixed yellow stare and her fixed expectant smile. He took her arm. "Come on," he said.

The crowds on the avenue parted miraculously to let them through. They saw faces turned away, faces staring up, faces staring down. In the drug store, the girls behind the fountain were in a whispering cluster; the customers were intent on the merchandise; the tobacco clerk was checking his stock.

A man at the directory rack turned away abruptly when Kip reached out to put his hand on the open book. Kip looked up two numbers and went into a booth. Nancy waited outside, with that same stare and that same frozen smile.

The police department did not answer.

Neither did the fire department.

The operator did not answer.

Kip hung up and sat looking at nothing much in the darkness of the narrow booth. He thought of the people who had disappeared, suddenly and completely and forever: Ambrose Bierce, Benjamin Bathurst, Judge Crater. . . . Had they spent the rest of their lives wandering among faces that were turned away, shouting across gulfs of silence, begging, weeping, praying, writing desperate letters that

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they knew would never be delivered?

There was one more number he was afraid to call. He dialed it, anyhow, with a steady hand.

Angelica's office did not answer.

. . . But that, it occurred to him after a long bitter moment, would be a switchboard operator like all the rest. He was trembling a little when he dialed Angelica's home number. There was no reason to suppose she'd be home at this hour, but—

"Hello? Hello?"

"Angelica!"

"Kip!" Her voice broke. "Oh, *Kip*. I've been so— Where are you, are you home?"

"No, I'm in a phone booth. In Santa Monica. Look—"

A thin arm came snaking past his face and tried to pull the receiver away. Nancy's ruined face was leaning into the booth: "Don't talk to her!" she said urgently. "She hasn't any *right*."

He pried her loose and got the receiver back to his ear. ". . . or hear me, it's as if I wasn't there. I called you, but there wasn't any answer. Kip, try to believe me, this isn't a joke—"

"I know," he said. "It's the same with me. Look, my place is nearer. Can you meet me there—half an hour?"

"Yes, but—*Yes*."

"I'm not kidding you," said Kip tightly, "and you're not going crazy, and it really is happening to both of us. And Nancy Liebert, too. I'll explain when I see you. Okay?"

"All right. See you. . . . *Kip*."

"Yeah."

"Nothing—I'm all right, now. Good-bye."

He discovered that he was still hanging onto Nancy's wrist, hard enough to hurt her. When he let go, her other hand came up to rub it, but otherwise she didn't move, and her too-bright, too-confident smile didn't change.

He hardly noticed. He was remembering something one of the blue men had said, not long ago. He hadn't been paying attention, and one word of it was all he could bring back now; but that was enough. One word:

Quarantine.

Nancy, who had not learned to like Angelica any better, was sitting on the edge of the leather chair by the bedroom door. Angelica was on the couch, feet together, hands in her lap, with an oddly watchful expression on her smooth face.

"Can you hear them now?" she asked. "What are they saying?"

Kip listened. "*. . . three-goal man at Poona, tall fella, cast in one eye, couldn't stand the climate . . . first shot, at over a hundred yards, you know; biggest buck I ever . . .*"

"Nothing useful," he said. "The major's talking about polo, and Dr. O'Leary about hunting. That's all they've been talking about, ths last half hour or so. I can't figure it; they sounded so worried before."

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"Kip, does it strike you that just maybe you're making all this up without realizing it—all these little blue men inside you?"

"And the quarantine, too?"

She frowned. "No, of course not, but does that necessarily have anything to do—"

"No, look, it all fits together. When I drank the vitamin solution that Nancy put in the prune juice—"

Angelica stood up irritably and reached for an ashtray. "If you had just called the police last night," she said in an undertone, and sat down again.

"But that was after the damage was done," Kip said reasonably. "Anyhow—"

"All right, tell me this, then. This vitamin exists in natural form, doesn't it? Something else breaks it down in the body, you said, but there must have been times when a person had this vitamin in him and not the other thing, whatever it is—"

"L complex."

"All right. Then why hasn't this ever happened to anyone before?"

Kip said, "It *has*. That's what I was trying to tell you. Look, George's vitamin comes from pork liver; L_1 is found in beef liver and L_2 in yeast. There are other sources for all of them, probably, but those are the major ones. So you can figure that anybody who ate a lot of pork and little or no beef or yeast might have his system clear enough of L, every now and then, to catch just a glimpse or two of a ghost. Right? All right, whose diet does that describe—and where do all the traditional ghost stories come from? Goblins, kobolds, banshees; figure them in, too—"

Angelica's eyes widened slightly. "The Irish?"

"The Irish, the Scots, middle Europeans—pastoral peoples, and not cattle herders, either; pig and goat farmers." He ticked them off on his fingers: "Pig. No beef. And unleavened bread—no yeast.

"Add the Chinese and other eastern peoples," he said. "Pig and rice, no bread at all—plenty of ghost stories *and ancestor worship*."

Angelica was silent for a moment. "And this is the first time the synthetic vitamin has been used," she said. "And that doesn't break down. I see. But surely it'll be used up, eliminated, sooner or later—then all we have to do is wait!"

"I don't think so," said Kip. "Theoretically it ought to, but if that were all there was to it, I can't figure why they'd be in such a sweat. I think *they* think it's going to last. And," he added, "if it was just waiting, I don't even know I could do that, for long. It's kind of rough."

Nancy said unexpectedly, "What does it feel like, Kip?"

He thought about it. "Crawly," he said. "Dirty, inside."

Angelica shuddered and looked away; Nancy merely nodded. "That's what I thought. I hear voices, sometimes."

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Kip looked at her intently; he started to speak, thought better of it, and turned to the paper parcel on the table.

"What's that?" asked Angelica.

Kip was taking bottles, vials, pasteboard boxes out of the parcel and arranging them neatly on the tabletop. "I picked these up before I left the drug store," he said. "Antispasmodics. Desiccants. Sedatives. Stimulants." He showed her a vial and a hypodermic syringe. "Adrenalin. Hope I won't need that, but you never know."

Angelica's eyebrows went up and down in the are-you-kidding expression. "And what's *that*?"

"Incense," said Kip, spilling the little brown cones into the tray they came with. "I hate the stuff."

Her lips tightened. "Kip—if you don't mind—?"

"Just a minute." He carried the hypodermic into the kitchenette, washed it, and put it into a saucepan to boil. He rummaged in the cabinet, found a bulb of garlic and a bottle of cola, and brought them back in with him.

He added a pack of cigarettes, the brand which was currently advertising a miracle ingredient the makers had *always* used but had just got around to mentioning; the glue that sealed the paper, probably.

"I wanted to get that started—it'll take a few minutes." He grunted. "They've shut up. I think they're beginning to catch on. Anyhow, it won't do any harm to tell you, I guess, because they'll know soon enough even if they haven't already read it in my mind. I'm going to exorcise them. E-x-*o*-r."

Angelica said nothing. Nancy giggled suddenly.

"After I tried a couple of obvious things like radiation and vibration, and they didn't work, I got to thinking about the traditional approach. Incantation, prayer, fasting, flagellation and so on. And garlic—that's traditional, and besides, I hate it. I had the usual prejudice, I guess—I thought it was all a lot of nonsense, but it wasn't. Those are all perfectly good lease-breaking methods. When you want to get rid of a tenant who's wrecking the place, and he won't budge, what do you do? You annoy the life out of him!

"The only trouble was, they didn't use the principle selectively enough. Suppose you happened to hit the ghost of a devout masochist with frugal tastes? The prayers wouldn't bother him, he wouldn't care about eating, and the whipping would make him feel right at home. But *I know* what my tenants don't like."

Angelica was beginning to look interested. "How can you be so sure?"

"Easy. I've got four—tenants. One of 'em was a British army officer, one owned a hacienda, one was a sea captain, and the other was a dentist with a passion for hunting. All outdoorsmen. Not one of them ever read a book for pleas-

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ure in his life. Okay. You remember that time I was telling you about yesterday—when I got sick? What did I do afterwards? I spent a season logging—and hunting when I had time. I shipped out, I worked on a ranch and in a boys' camp, I had a hitch in the army and so on and so on . . . and here I am, in a job that keeps me outdoors and doesn't require me to read any books, and gives me plenty of free time to swim and play tennis and hike and hunt—and I don't mind telling you the thought's occurred to me more than once that if I ever got rich, I'd buy a string of polo ponies."

Something kindled in Angelica's eyes that he'd been missing; something he thought he'd heard in her voice on the phone, only to be disappointed when she turned up half an hour later, cool and self-possessed and faintly watchful. "Kip, that's— You've *got* to get rid of them!"

"Sure."

"But what about the drugs? I don't see where they fit in."

"If they can control other people, even at a distance, to make them forget to look where one of us happens to be—then I don't find it hard to believe they can play tunes on my nervous system if they feel like it. . . . I think I'm going to get awful sick *again*."

The hypodermic ought to be sterile by now; he fished it out, put it together, filled it from the ampule, and laid it ready on the table, with a clean dishtowel under it. "You know how to use this, if you have to?" he asked Angelica. She nodded, her eyes big and intent.

He pulled down all the blinds and closed the curtains. In the dimness, the floor lamp made a sharp cone of yellow light. He moved it over near the table and put a straight chair under it; then he crossed to the bookcase and pulled out a thin volume in a red and yellowed-gray jacket. "All my law books are in storage," he said, "but this ought to do. Wiener's *Cybernetics*—I bought it five years ago and never got past chapter one."

He went back to the kitchenette and adjusted the faucet to a steady slow drip. He hesitated, looking over the collection of things on the table; but everything was ready, there was no reason to wait any longer.

He sat down under the light, touched a match to the incense cones and watched the gray smoke curl up. *Tonk,* said the faucet in the silence.

He opened the book and began to read aloud.

"If the original group is the translation group on the infinite line, so that the operator T changes x into $x + T$, (2.03) becomes," (*Tonk*)—he paused slightly—"(2.06) $f(x + T) = a(T) f(x)$, which is satisfied if $f(x) = e^{iXx}$, $a(T) = e^{iXT}$. The characters (*Toïk*) will be the functions e^{iXx}, and the character group will be the

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group of translations changing X into X + T, thus having the same structure *(Tonk)* as the original group. . . ."

Kip's voice was hoarse. Beadlets of sweat were breaking in the furrow between his brows and trickling down; his eyes blurred and stung. He groped for the clove of garlic on the table, shaved off another bitter, oily bite of it between his front teeth, and kept on reading, concentrating, following the argument.

The incense was getting so thick that it was like trying to breathe cologne. His feet were asleep, and the hard chair was giving him a beautiful case of lecture-room cramp. He lit another cigarette.

"In the case of the group of rotations on a circle, this *(Tonk)* gives us directly that if

"(2.10) $f(x) = \sum a_n e^{inx}$,"

(Tonk) His stomach lurched. "then:

"(2.11)

$$a_n = \frac{1}{2\pi}\int^{2\pi} f(x)\ e^{-inx}\,dx;"$$

(Tonk)

It lurched again; Kip began to wonder if three antispasmodic pills were going to be enough. He took another, and washed it down with cola.

Time *(Tonk)* passed.

He felt a growing reasonless panicky urge to turn his head aside, to get up from the chair, to close the book. It was a hard thing to fight, even though he knew what it was, but he found he could do it: it was knowing, and having a reason to fight, that made the difference.

He lit a cigarette from the butt of the old one, and kept on reading. When the equations blurred and jumped, or when he found himself reading without understanding, he grimly went back and started over.

His stomach squirmed. He took another pill.

His heartbeat speeded up. He took a sedative.

His nostrils began to itch. He sneezed convulsively, blew his nose, sneezed again. His eyes were watering, his nostrils filling with mucus, his lips and throat and the membranes of his eyelids were bloating. As the seizure mounted, he fumbled for the antispasmodics and desiccants and took a triple dose.

It got worse; his nose was so choked that he couldn't breathe through it; he couldn't see no matter how often he wiped his eyes. Then his throat began to constrict. Wheezing sounds came out of him. He couldn't take a full breath—he couldn't *breathe*.

It was worse than he had ever imagined it could be.

Somebody's fingers were prying at his wrist. He let go the book and felt small hard shapes being pressed into his palm—two of damned near everything, by the feel. He

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swallowed them, put out his hand again and found a glass. Water, thank God; he couldn't have stood any more of the cola.

"Kip, I'm *sorry*—" said Angelica's voice from a long way off.

Very slowly the worst of it went away. When he could speak he said, "Thanks, Angel." When he could see, and had enough breath left over, he raised the book again and began where he had left off, reading a phrase, stopping to breathe through his mouth, reading another.

(Tonk) "Note that this expression (3.091) is positive, and that it is independent of w. It is one-half the logarithm of the ratio of the sum". *(Tonk)* "of the mean squares of u and v, to the mean square of v. If v has only a small range of variation, the amount of information concerning" *(Tonk)* "u which a knowledge of $u + v$ gives is large . . ."

The headache began. One massive dose of methadon—all he dared take, with half the pharmacopoeia in him already—sprung the jaws of the vise far enough apart to let him think again; and no farther.

He read on. The warmth of the light on the back of his neck spread around to his cheeks and forehead. It grew. Kip thought of fever, but the rest of his body was still cool, and he didn't have the light-headedness or the skin sensitivity that go with fever.

"Kip, your *face!*"

He touched his forehead, and felt squashy serum-filled blisters that broke under his fingers. There was nothing to do about blisters, and the pain wasn't intense; just bad enough to be a distraction from his other troubles.

"That is, the transformation group *(Tonk)* consisting of the operators **T** which change $f(t)$ into $f(t + X)$, leaves the probability of the ensemble invariant. The group satisfies the prop- *(Tonk)* -erties that . . ."

Little muscular tremors began to travel down his arms and legs and trunk. He was bouncing uncontrollably in the chair; the book joggled, his head nodded and his jaw shook. Stabs of pain tweaked him all over. Bursts of idiot emotion followed them: despair, hatred, fury, fear.

To Kip, it was as if his body had been taken away from him: he himself was somewhere inside, a tiny straphanger clinging desperately to one thread of purpose. As long as he hung on, the letters would keep bouncing across the screen, and that giant voice that wasn't his any more would keep roaring and groaning and jerking out their meanings; but if he once let go—

The screen went dark.

The shock was enough to swell Kip out to man size again, and he sat in the chair, in his own private darkness, feeling such a torrent of anguish and despair as he'd never known before.

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Trumps. *If you can't see, you can't read.* He had no card to play against that. He was done.

The book twitched out of his hand.

A strained voice began reading: "'For example, for quite a wide class of functions *f* of *t* where minus infinity is less than *t* which is less than infinity, we have fully determined *f* when we know the set of quantities: three seventeen —*a* sub *n* equals the integral between minus infinity and zero of *e* to the *t*, *t* to the *n*, *f* of *t*, *d* of *t*; *n* equals zero, one, two and so on. Now let A be some function of the values of *t* in the future: that is, for arguments greater than zero. Then we can determine the simultaneous distribution of *a* zero, *a* one and so on up to *a* sub *n* and A . . ."

He hung on gratefully, in the roaring darkness. The tension in the room squeezed slowly tighter like a fist; everything grew more unbearable all at once, the pain, the nausea, the itch—and then, all at once, everything stopped.

The blindness lifted. He was free.

And he realized for the first time that the voice which was still reading was not Angelica's; it was Nancy's.

"Are they really gone?"

"I think so," said Kip numbly. He felt peculiar inside; it was a thing he couldn't put a name to, a sensation he couldn't remember ever having felt before. He looked up. Angelica's eyes were shining; and he realized with a queer shock that he didn't feel any particular way about that—it was as if—there was nothing inside him telling him how he *ought* to feel. That was a funny thought, too. Had there ever been?

He was too busy exploring inside himself to wonder about it. *Major?* he said silently. *Don Nobilio?* There was no answer, only a hollow feeling, a little like the echo in an empty apartment. It was peculiar. He wasn't even sure he liked it.

"Hmmm?"

"I said, sorry I couldn't help," Angelica told him.

"Uh, but you did, didn't you? Those pills, before?"

She shook her head unhappily. "I was over by the door. I'm sorry, Kip, I wanted to help, I thought I could. But that's something I can't stand—sickness, or any kind of—" She glanced at Nancy and looked away.

Deformity was the word, probably. Nancy was standing across the table, the book still in her hands, the same smile on her face. Kip was beginning to wish something would break that smile; it looked like a thing that had been fastened onto her, hurting her.

". . . When the blisters started, I couldn't take it," Angelica was saying. "You look a lot better now, how do you feel?"

"All right," said Kip abstracted-

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ly. "Nancy, I owe you a lot. I mean— Thanks."

"You're welcome," said Nancy politely.

What was going on inside that head? She didn't do things at random; all her responses were ordered and purposeful, they just came out of the wrong slots, kind of—like gum when you put a nickel in for candy. He knew what was wrong with her: at least he knew the name for it, but the name was only a label, useful for identification and for covering up ignorance. What's *that?* Psychoneurosis. What's psychoneurosis? *That.*

But what was it really, that could get into your mind and change everything around so that everything that happened to you and everything you did was like an untranslatable passage in a foreign language?

"Kip, how do you feel about *things?*" said Angelica.

He looked at her blankly. "Things?"

"Your work, and your job," she said, her tone making it clear that she meant two altogether different things.

"I don't know," he said slowly. There was still that curious emptiness, and the more he tried to define it in some other way, the more forcibly it reminded him of an empty house: the vacancy where you expected to find a familiar table or chair or lamp. "I can do whatever I want now, I suppose. . . . Maybe I'll go back to school. At night."

"Take you a long time to get your degree that way."

He said, "Huh?" and then, "Oh. You mean the law. Funny, I hadn't even thought of it."

"Well, what else—?"

"There were a lot of things I couldn't fit into my schedule before. Abnormal psych, sociology, comparative literature—and that course in the history of the movies. . . . No more law, I don't think. I'd be picking it up a little late."

"Well, but you can do it, Kip. My boss passed his bar exams when he was forty! If you want it badly enough—"

"That's just the thing," Kip said carefully. "I don't."

"You don't."

"No. That must have been just a kid thing, after all. Hero worship, maybe—my Uncle Austin was a pretty well-known trial lawyer. You remember, the one I was telling you about—"

"The one who fell off the ladder," said Angelica expressionlessly.

"Yeah, he— *Oh*-oh."

"What's the matter?"

Kip blinked twice before his eyes focused again. "Well, nothing, except—I just happened to remember. It was *after* Uncle Austin fell off the ladder that I got this big yen to be a lawyer. Right after; the same day. I remember, I felt all noble about it at the time—I was going to carry on where he left off,

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pick up the torch and so forth. . . . Oh! Oh!"

"I don't get it," said Angelica.

He looked at her pretty, impatient face and at Nancy's frozen one. "Suppose when Uncle Austin died, *his gang of spooks* moved into me? My God, is that what makes lawyers? I always kind of wondered about it, myself. . . . I must have been about fourteen that year. And then along about eight years later—wait a minute, I've got to think."

He knuckled his temples for a moment, then looked up.

"The only way it makes sense is if this happens to people a lot oftener than I thought. I get one gang at fourteen. For all I know there may have been others before that, but say there weren't. Maybe up till puberty a kid's no good for them—too sexless, too alien. But you'd think puberty itself'd scare them away; I was a mess—" His eyes widened. He glanced at Nancy involuntarily, then shook his head.

"No, it couldn't be. That would mean everybody's got them—it's bad enough this way. Anyway, eight years later; no, say six or seven—I remember the Major talking about how long it took them to whip me into line. . . ." He grimaced. "Call it six—that would make me twenty, and that was the year I had my first serious love affair. You could argue that that marks another level of maturity, as important as adolescence. I know I felt that way about it. And wham, the first batch leaves or gets kicked out, and another one moves in. The question is—"

"Say what you were going to say before," Nancy interrupted. "Was it something about me?"

"No, not about you, Nancy. I was just thinking, what if I had it backwards—what if it was the first tenants moving in that caused all the—the skin disorders and the emotional upsets and so on? Instead of the other way around. But I hope to blazes that was just a wild thought, with nothing to back it up, because— Oh, *no!*"

Angelica stood up in one motion and took a step toward him. They were both staring at him, looking a question. After that first instant he didn't look at his shoulder, but he could hear the little voices mumbling and squeaking at him, like the sounds of mice inside a wall.

"Six of them," he said dully. *"Different ones."*

"Have you found out anything?" Angelica asked.

Kip finished pouring the third cup of coffee and loaded it onto his tray. "Some," he said. "Not enough." He looked around for silverware, found it, and took three of everything. "This stuff is going to get cold before we get it upstairs."

"All right, but you don't want to eat it down here, do you?"

He looked at the backs of the two cooks, the salad-counter girl and the waitress, all clustered down

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at the other end of the kitchen. "No, I guess not. Okay, eggs, toast, coffee, milk—what about that damned breakfast fodder for Nancy—oh, you got it? Let's go."

They shouldered out through the swinging doors into the half-empty dining room. A hotel had seemed the obvious answer last night; the quarantine, they'd discovered, was still on, if it had ever been off at all, and there wasn't room for everybody at Kip's. They'd driven around downtown L. A. looking at room lists till they struck a place that had a vacant second-floor suite. Then all they had to do was take the key out of the box behind the room clerk's oblivious back, and move in.

One trouble was that there wasn't any room service.

They couldn't use the elevator, either, unless they waited for somebody who was going to their floor. So far they hadn't even tried it. It was getting to be actively unpleasant to be near other people; for Kip and Angelica, at any rate—if Nancy found this state of affairs harder to take than her ordinary life, it didn't show.

Back in the suite, it was better. The sitting room was quiet and secure; the walls closed it in; there was an air of shipwreck about it, or of world's end, but at least all the corpses were outside.

The eggs were cold, all right, but the coffee was gratefully hot. "Kip, *can* you tell us anything?" said Angelica.

Kip, who hadn't slept, rubbed his whiskery chin irritably. He had brought a razor along, but he didn't feel up to looking in any mirrors.

His population had increased to nine, overnight.

"The two new ones are named Tom and Cliff," he said. "I don't know much about them, except they're brothers. The other ones—there's Pappacostas, he was a wine merchant. He sings hymns in Greek, but I don't think he sings them the way they were written; he laughs like hell when he gets through. Burke—had an auto agency, hated his wife. That's all he talks about. Schleier—ran a poolroom, likes the horses. Ottley—worked for the telephone company, talks about women. Freeman won't tell what he did for a living. Levinson was an offset stripper, whatever that is. Not burlesque, anyhow—something to do with commercial lithography. Leeuwerink—he was a jeweler, the kind that makes rings, not the kind that sells them. Used to raise pigeons."

Angelica waited. "Is that all?"

"Makes nine," said Kip, and bit a piece of toast as if it were a throat.

"But is that all you know about them? I'm sorry—but it isn't enough, is it?"

"No."

"You have to find out what they *don't* like."

"Right."

"How much longer do you think it'll take?"

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Kip set his fork down. "I don't know," he said with great restraint. "They don't like each other, most of them. That isn't much help. The other time, it was no problem, because they had me trained—what they didn't like, *I* didn't like. Maybe it'll take months or years for that to happen again. I dunno. I've been knocking myself out, trying to think of a way—"

"They don't sound like intellectuals. Why wouldn't the book work again?"

"Tried it last night. Nothing. Either it just didn't bother them, or one isn't enough—you have to hit them with half a dozen of the things they hate the most, all at once."

Nancy patted her lips delicately with a paper napkin and said, "Why don't you try doing a lot of different things?"

For a minute they had forgotten she was there. Kip blinked at her. "It's an idea," he said cautiously. "Go to the zoo, drink beer, ride a bus, smell flowers, look at a policeman— Why not?"

"Ice cream and pickles," said Kip gloomily, and crossed it off his list. "Now what?"

They sat in a row on the curbstone and thought about it. The list was a long one: *beer, policeman, flowers, bus, concert, juke box, zoo, lecture, church, haute cuisine, chow mein, tamales* . . . Most of the items were crossed off; a few had question marks beside them.

They had had one success, early in the day: half a glass of a popular alcoholic beverage, which tasted like sweetened grape juice only less so, had made Kip violently sick. He had kept drinking the stuff between spasms, while Angelica chanted the *Kyrie Eleison,* and when the bottle was gone so was Pappacostas, the wine merchant.

But none of the others, apparently, was that simple.

"You've had enough to eat and drink for a while, I guess," said Angelica. "What about some more noises? Boiler factory?"

"Know where there is one?"

"No, but there are plenty of aircraft plants."

So they tried an aircraft plant. They walked down a long aisle, under lights that turned all the pink in their skins to a hectograph purple, and the rest yellow, and made Nancy's face into something you would only look at once; past an enclosure where a girl was punching neat holes in an aluminum stamping; past a bigger place where two men and a girl in overalls were doing nothing at all to a partly assembled plane; past an office where a stout man was waddling rapidly on flat feet from a bench to a set of vertical files on the other side of the room, and back again; past the doorway of a beaverboard hut inside which, in front of a beaverboard barrier, sat a frog-faced plant policeman.

Angelica stopped and looked thoughtful. She said something Kip didn't catch, in the din.

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"What?"

"Said that would be the experimental design section," she shouted in his ear. "Extremely hush-hush!"

"I guess so." He started to move on, but she put a hand on his arm.

"Kip, we could just walk in there."

"Well, sure. But why would you want to?"

She looked irritated. "I *don't* want to. I was just thinking—I don't know why I never thought of this before—"

He waited, but she seemed to have forgotten about him. He touched her on the shoulder.

"Kip, you can spare me for a couple of hours, *can't* you?"

"Well—yeah, but what's this about hush-hush—"

"Kip, listen. I know you're going to lick this thing soon, and then the quarantine will be over. I can't pass this up, I must have been blind—I could kick myself. Don't you see? If I can find out what Magnusson and Sweeney are going to do at the council meeting Thursday—it would mean so much! Is it all right? I'll meet you back at the hotel tonight sometime: okay?"

"Sure," said Kip, trying not to notice how hollow he felt inside. "Hey, wait—you want to take my car?"

She hesitated, then took the keys. "All right, then—you can take the bus from here. See you!" She vanished down the aisle, running, people melting out of her path as she went.

It was a long ride back on the bus, and Nancy sat stiffly with her arm through his all the way.

He didn't want to be alone in any hotel room with Nancy, so he led her on a long tour up Broadway and down Spring, stopping every few yards to try something else, although he was sick of it and had no hope for it at all. They wandered through the five and dime handling the cutlery and tools, looking at goldfish, sniffing cosmetics; they tried oranges and gimcrack jewelry, stopped at a movie for twenty minutes of Betty Grable, looked at copies of the *Times*, the *Mirror* and the *Christian Science Monitor*, went into a garage for the smells and a ballroom for the noise, smoked rum-flavored cigarettes, watched Edward R. Murrow on television and petted a stray cat. It took them two hours; nothing did any good; and when they got back to the suite Angelica still was not there.

Kip got the Gideon Bible out of his room and read half the begats to Nancy because he was desperate, and some of the ordinances in Leviticus because they had once amused him, and David's lament for Jonathan because he liked it. And a little after midnight Angelica came in.

She was bright-eyed and rosy. She looked as if she had played three fast sets of tennis and swum

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a mile, and as if she were on her way now, not even breathing hard, to collect murderous looks from women at a cocktail party.

"How was it?" Kip asked.

She sat down beside him on the couch, not the way most women would have done it—in three stages, each preceded by a cautious peek at the area to be honored—but all at once, thump, as poised and sure as a flung javelin.

"It was wonderful. I couldn't locate Sweeney, he seems to be out of town. But I found Magnusson talking to Weiss, and I know they're going to meet Sweeney tomorrow morning, and I know where. How did you two make out?"

"Not so good."

"I'm sorry. But you'll get it tomorrow, I know you will. As soon as I get back, we'll hit it together. It won't take long. You believe that, don't you, Kip?"

"Sure."

"If we started now," said Nancy to no one in particular, "it would be quicker."

Angelica glanced at her, frowned, and turned to Kip. "I should have explained before, but there wasn't time—probably it sounds very silly, but this meeting Thursday isn't just an ordinary Council session, the whole election may turn on it . . . and it is, or it could be, awfully important. How do you feel? Is it very bad, can you hold out till tomorrow afternoon?"

It was getting hard for Kip to listen to long sentences; he was like a man straining to hear the telephone at a Saturday night brawl. ". . . *comes up t' me with a mumble piecea pipe innis hand . . . mumble pretty potted, so I grabbed her by the . . . second time, you understand, twice in a row, mumble, and I don't take that kind of mumble . . .*" "It's okay," he said fuzzily. "Tomorrow's swell."

"You're sure."

"Sure."

Angelica went off to bed, meaning to be up and stirring betimes, and after a while Kip went too. He heard Nancy moving around in the bathroom, and then her door closed, and the silence settled down: the thick, muffled silence that belongs to hotels at night, and is deeper than most because it's built of layer on layer of sounds just too faint to hear.

The voices inside him went on, loud against that background, and he lay blind in the darkness listening to them. How long could you go on like this? After a month or a year, if you lasted that long, could you get so used to that interior gabble that you wouldn't hear it at all?

It didn't seem to matter much. There was a slow shifting and settling in his mind, and it ended with the spark of his awareness on one side, and all the pain on the other: still there, close enough to touch, and just as bad as ever, but it was as if he were looking at it

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through a window . . . or down into the darkening depths of ocean. . . .

The sedative he'd taken was beginning to work, he realized fuzzily. Then he was adrift, turning slowly in space, while his outlines melted and expanded, and the darkness flowed into him until they were one.

He came awake slowly with the fragment of a dream in his mind. For a moment he thought he was still dreaming, and that the voices were part of it, because they were talking about the blonde dream girl: but the bright, hot picture faded and the voices didn't.

"(chortle) boy, what a pair of . . . how'd you like to (laughter) . . ."

He was tangled in the bedclothes and clammy with sweat. The air was cool and fresh; the windows were visible as oblongs of gray on black. It must be near morning.

They were watching my dream, he thought, and was suddenly so sickened that he couldn't bear to hear the voices any longer. He started a competing clamor in his own mind: songs, recorded memories of Sousa marches, football crowds, bowling alleys, anything. Gradually the voices quieted, but he clung to the memories, more coherent and more vivid now: Saturday afternoon, with the air crisp and cool and the bleachers a honeycomb of faces . . . football tumbling slowly down the blue sky over the goalposts . . . Evelyn Nesbitt, sitting across the table from him in the Grog Shop . . . Mary Clyde, the little brunette he'd dated in Snoqualmie . . . and Angelica. Angelica. Angelica. . . .

He was standing barefoot beside the bed with the switch of the bedside lamp in his fingers, blinking at the sudden warm light.

What *about* this?

He had found himself thinking about Angelica lying asleep in the next room: not Angelica the girl who meant "No" when she said it and would never be coy about saying "Yes" if she meant that; and not Angelica the eager politician, but just Angelica, softly and warmly asleep in the darkness.

It was wrong: not because it said so in any book but because it had never been like that between him and Angelica, and perhaps now it never would be.

And even now, he realized with shame and horror, he didn't care.

He didn't care if she fought him.

There was a waiting silence inside him, and that somehow made it worse. It would have been easier if they had been talking to him, urging, insinuating; his anger would have helped.

He bent over numbly, found his clothes and began putting them on.

One lamp was glowing at the far end of the sitting room. Someone was kneeling in front of it, a cusp of light along her red hair: Nancy. He tried to get past her

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quietly, but she turned before he reached the door.

"Kip?" She got up awkwardly and came toward him; her dress hung loosely on her, unbelted and unbuttoned. She saw his face, and stopped. "What's the matter, Kip?"

"Nothing." He got the door open. The voices were beginning again; it was intolerable—he hadn't even noticed that Nancy was wearing nothing under her dress, but *they* had . . . He slammed the door on her "Where you *going?*" and ran for the stairs.

A little rose-pearl light was beginning to filter up over the tops of the buildings to the east. Under it, the city was cold and gray. Kip paused for a moment to look at a ragged man asleep in a doorway. Was anybody inside him, watching his dreams?

Footsteps clattered after him down the pavement. He turned. It was Nancy. She had stopped to put on shoes and a coat, and she was carrying something under her arm.

She halted a few feet away, and held the thing out—his raincoat, rolled up into a bundle. "I thought you might need this," she said doubtfully.

"Thanks."

She stood waiting, and he realized that she wasn't going to make a fuss, or follow him if he asked her not to. "You really want to help, don't you?" he said.

She nodded soberly. "I'm—trying."

"All right. Come on."

She trotted along beside him. "Where are we going?"

"We're looking for a box," he told her, and kept going, hands swinging clenched at his sides, while the blood beat at his temples *Angelica—'gelica—'gelica. . . .*

It took them a long time, wandering down back alleys, before Kip found what he wanted: a heavy crate, not quite five feet high and about twenty inches wide. He got into it to see if he could, and Nancy stared at him round-eyed but didn't ask any questions.

When he dropped the thing in the middle of the sitting-room carpet and straightened up, he noticed for the first time that his duffel bag was open and the things that ought to have been in it were scattered on the floor—all but one. The incense tray he'd bought yesterday at the drug store was on the end table under the lamp. It was a cheap piece of stamped, black-enameled tin, probably made in Brooklyn, and stuck onto the rim of it was a gold-enameled figurine of a cow.

A gilded cow.

Or a golden calf?

He turned and looked at Nancy. "You weren't—"

"I've prayed," she said, "to everybody else."

There was pain in those fixed eyes, so deep and so full that it hurt him to look, and he couldn't look away.

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He put his hands on her shoulders. "Nancy—"

"But nobody answers, ever—do they."

After a moment he let go. "No," he said, "I guess they don't."

Angelica was coming into the room, fresh and rosy, knotting the belt of her robe. Her expression of faint surprise turned to something sharper when she saw the box. "Kip, what's this for?"

"The usual thing," he told her. "I can't wait any more, Angel—I thought I could, last night, but it's a lot worse now. I can't even tell you how bad it is. It's got to be now. I'm sorry."

"You—" she said, and sucked at her lower lip. "All right, if that's how it is, of course, Kip." She looked at the box again. "What are you going to do with this?"

"Just get into it and stay there," he said tightly, "until this gang of ghouls gets out of me. Or until I die."

"But you don't know it will work—"

"It'll work." He bent over and squeezed himself crabwise into the crate. It was just big enough to contain him, head down, knees bent; he couldn't sit down in it, and he couldn't stand. "There was something I forgot—didn't want to remember, maybe. Some things nobody likes, except masochists, and I haven't got any of them. The old formula. Flagellation. Rack, thumbscrew, water torture." He tried to grin. "This is the same thing, only more modern. Cheaper and just as efficient."

He added, "It takes awhile, though, so if you want to go—"

She hesitated, looking down at him, sober and concerned. "Kip, I *hate* to go— All right. I'll be back," she said, turning, "as soon as I can."

She was dressed and gone in five minutes, and then the room was very quiet. Nancy sat on the couch, feet together, hands in her lap, watching and saying nothing. Kip crouched in his box.

After the first minute his knees and the back of his neck had begun to ache. His head was jammed into the angle between the top and side of the crate; he could lower it a fraction of an inch, but he couldn't raise it; his knees were as far down the narrow space as they would go.

Later the ache spread to his shoulders and chest. It was exactly like a heavy metal chest plate; he could feel the weight of it every time he breathed.

Still later, it was his ankles. He was able to move his feet a little, but each change of position relieved him only for a few seconds; then the knob of pain swelled again in each ankle, worse than before.

Then the cramps began: in calves, thighs, chest, groin.

He was breathing in short, sharp gasps. In his constricted chest his heart thudded irregularly like a trapped thing, and the pulse-beat

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slammed at his temples, as if it would burst the skin. The weight against his head and shoulders was Atlas' burden, the whole earth.

That's enough, the voices inside him kept saying; *you tried, you did all you could. Give it up—you just couldn't make it, that's all. Nobody could do a thing like this to themself.* His body sagged outward. It would be so easy—*sure, easy,* the voices said, *just let go—*

Somewhere inside, deeper than the voices, he found a thing to hang onto. He moved his body the fraction of an inch that meant he was staying in instead of falling out.

The torment went on.

After a long time Nancy came over and wiped his forehead with a cool, damp cloth. He squinted up at her.

"All right?" she asked.

"Sure," he said thickly. "Nancy."

"What, Kip?"

"Light me a cigarette."

She went away and came back with one. He could see her fingers shaking as she put the match to it. She held it out, and it was the one thing he wanted most in the world.

"Changed my mind," he said. "You smoke it." After a moment she started to move away, and he said, "No, stay here. Smoke it here."

He watched the tip glow and saw the smoke curl out, blue from the burning end, fog-gray from her lips. He smelled it, and his racked body went hollow with hunger. She smoked it down to a half-inch of butt before he let her go.

Another idea stirred in him through the pain and the longing, and he said, "Nancy. Go get me—bottle of rye. A fifth. And two quarts, beer. Go ahead." Her skirts rustled away. He muttered to himself, "Get swacked on boilermakers. Stand anything. Stay here forever, drunk."

She was gone a long time.

She came back hurrying, door slamming behind her, and set the paper bag down clunk on the carpet, breathing hard. She looked at him wordlessly.

"Open it," he wheezed.

She took the bottles out and set them in a row. She reached into the bag again and pulled out a bottle opener. "No," said Kip, and paused for a breath.

"Break 'em."

She stared at him a moment and then stood up with a bottleneck in each hand. Leaning over, holding them away from her skirt, she swung the two bottles together. The fifth shattered at the bottom; whiskey splashed her ankles. She dropped what was left of the broken bottle, picked up the other quart of beer and bashed again, harder. Glass flew; Kip heard a piece of it rattle in his crate, and saw a drop of blood well from the inside of Nancy's calf. She didn't notice it. She looked at the one bottle that was still stubbornly intact, and then she stooped for the opener,

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wrenched the cap off and held the bottle upside down while the beer glugged out.

Kip closed his eyes involuntarily. When he forced himself to look again, the frothy puddle was already soaking into the carpet. It smelled like all the distilleries and breweries in creation; there were jagged bits of glass and a soaked paper bag mixed up in it; it was a mess. It was more than that: it was the pure instinctive essence of tragedy; the seized candy, the drowned kitten—

The waste, the waste . . .

Hot tears leaked out of his eyes. Then he felt a spasm of rage; then nothing but the slow waves of sensation that pulsed up and down his numb body.

Somebody was shaking his shoulder. "Kip, Kip!"

He blinked and squinted. "Wha—?"

"You were falling asleep."

"'S right." He had been just about to dream something, too—something languorously pleasant, gone now like a burst soap bubble. *Danger.* That waiting stillness inside him— He scrubbed his face with his palms. "Nancy, gimme pill. The li'l white ones."

"Wait a minute." She came back with the pills, two of them, a glass of water and a straw from God knew where—she must have brought it up with the beer.

The light from outdoors slowly brightened. He had been in the box—how long? Two hours? Three? Elsewhere men had suffered this same torment for days on end, and without breaking.

If they could do it, he could.

I'll stay here forever, he told them. *If you get out and then come back, I'll climb into the box again. As long as you stay, as long as I live, it'll be just—like—this.*

There was a sense of pressures building up inside him . . . and something else, another almost-movement nearby. It was disquieting; he strained to feel what it was, but he couldn't.

The pressures grew.

"All right—sucker," said one of the voices.

Something burst. There was a brief flurry of incorporeal motion.

The second group of tenants was out.

And the third was *in.*

When he had enough liquor in him, like now, he could still hear the voices, all right, but they were a long way away and he didn't have to listen. He saw the little blue faces gibbering wrathfully at him every now and then, when he forgot and looked in a bar mirror. They hated it when he didn't listen, but there wasn't much they could do about it. They *wanted* him to be drunk, most of them; they just didn't like how tough it was to make him do other things.

Funny how he'd never liked to get drunk before—only once or twice a year, maybe, and then more for the hell of it. This was the

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way to be, with the high thin singing in his ears, and his brain turning smooth and oily-bright to the pull of some cockeyed star.

And the liquor was absolutely free, because nobody knew he was there at all.

He choked and sprayed chewed peanut down the front of his jacket, over an old liquor stain. He rubbed at it automatically, noticing how thin his fingers had got. He'd been losing a lot of weight, the last few days, and his clothes hung on him funny. And he hadn't bothered much with shaving or washing either, but that was all right. That was fine, because when he did forget and look in the back-bar mirror, it wasn't a face he recognized at all, it was some other guy with those little blue monsters squatting on his shoulders.

The only trouble was—

The only *trouble* was—

The, only, trouble, was, there was nobody to fight. That was it. That was one of the things the voices wanted him to do the most, and he couldn't, because— Well, where was the fun in slugging somebody that didn't even know you were there, and couldn't slug back? Fish in a barrel. He could flatten any of them. That big guy in the leather jacket with his back against the bar, shot glass in his fingers like a thimble. He could stand in front of him and measure him and put him can over teacup over that bar, him and his leather jacket. But he wouldn't.

. . . hit him anyway HIT the lousy . . .

Shut up.

There was another trouble, but he didn't remember what it was. He didn't *want* to remember that he didn't want to know what it was, that was the way it was. And that worked out perfect, because when he was as drunk as this he couldn't remember what it was that he didn't want to remember that he didn't know *what*. Only sometimes it bothered him, and it had something to do with—

Never mind her.

Her who?

Never mind.

Time he was getting out of this rotten joint, anyhow. *Break the mirror.* That's right. He picked up the bar bottle with its plastic spout, still heavy, he'd only had about four shots out of it, and swung it to a swift star of white glass tinkling icy echoes out of itself down among the falling bottles, clinketa clank. He saw the heads turning on one string all over the room, and that was that. He walked out of the place favoring his bunions in the same little island of clear space in the middle of the crowd that he walked in wherever he went. And the rainwet street was just as dark in between the cold bulbs and as shabby and lonesome as it had been before.

Let them figure that out.

He walked up the street looking in at bars, but they all had busted mirrors; that was how he marked

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them so he would know not to go in the same crummy joint twice. If they put in a new mirror, all right, he would have a few drinks and bust it again. But lately they were just boarding them up, and he was running out of bars.

The burleycue across the street was closed; that was the one where he threw the eggs that time, and then came back next night and squirted seltzer and started a riot, because they ought to know better than pass off a rotten sleazy show like that for burleycue. The one up the block was still running, but he'd seen the show and it wasn't much better. World was going to the dogs. Burleycue with three baggy strippers, each one old enough to be the other one's mother, good God, and a little spit of whiskey for half a dollar, when it used to be all you could drink in one swallow out of a rubber hose for a nickel, and a man that knew how to hold his breath could fall down dead drunk when he let go. And nobody to fight an honest fight with.

He passed two cops walking tandem and looking fierce the other way, and then half a block later another two. There was the dirty-magazine store closed up and padlocked where he made the snowstorm with paper, and the record shop where he broke all the records. Boards on the pawnshop window; that was the time he saw a wrist watch he wanted, and where the *hell* was that wrist watch now? He felt his bony wrist. Gone. He must have thrown it down a sewer, or something.

Played out. Damn town never was any good, bunch of flatfaced hillbillies in flowered shirts, give a dime for the lot of them and get two cents change. Best thing to do be hop a coaster up to Frisco or Seattle. *How about those movie studios, though? Go take a look at the starlets . . .*

No. Think I don't know when it's you talking, not me? Don't like how I do, get the hell out, you will anyway—can't even keep track of your names anymore. What am I, a lousy transient hotel?

Yes.

A flophouse? With dirt an inch deep on the old curved banisters, and damp peeling the wallpaper, and the smell of cockroaches in the walls?

Yes. Yes. That's what I am. And you're all a bunch of no-good bums, worse than me.

Wasn't for this quarantine there's plenty he could do, he's broke in good . . .

There you go. No sense to it. If you guys aren't making the quarantine, WHO IS?

Silence.

They wouldn't answer. Scared of something. Stubborn. Unprint 'em. Squabbling with each other now like they usually did, fifteen or twenty of them all at once, drive a man crazy if he wasn't drunk enough not to listen. Scum of the earth. Scum of the earth.

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He heard a cracked voice singing and caught a glimpse of somebody silver-spangled down the street, swaying and singing. *"A pret-ty girl—is like a—"* That would be Nancy, and he didn't want to see Nancy right now; all things considered, he saw too much of Nancy. So he veered right at the corner and walked down into the darkness until the crowds thinned and his lone footsteps went flap against the housefronts, under a cold star.

And he started hearing the voices again.

The first light he saw, he blundered down into it and it was an empty poolroom with four guys playing cards under a naked bulb in the back. He kibitzed for a while but it was dull, they were playing for nickels and dimes and the cards were running slow, so he livened it up. The dealer dropped an ace bucking for a full house, and the fat-lipped little guy on his left had aces.

So he picked the ace out of the discards and put it back on top of the pack, and when the aces won there was a nice five-minute hassel that ended with the dealer on top of fat-lips choking him purple. But then the other two dragged them apart and took fat-lips away; and the dealer kicked a chair, and finally locked the door and went upstairs, leaving him alone with the mortuary slabs of the pool tables dismal under the one light.

He pitched billiard balls through the plateglass until he had a hole big enough to walk through zigzag, and went on up the street trying to sing a little, himself, but it was too lonely a noise. And the voices were bothering him again.

Then there was nothing for weary blocks until he hit a little art-jewelry store with a light in the window; it was closed, there was nobody there, but right next to it was a doorway with a dim bulb burning over a card that said "Madame Rayma," and he could see shadows moving against the windows overhead. So he went up the stairs in a hell of a hurry, and the door was unlocked, and he went in.

Somebody was moving around the room turning off lights until there was only the one left, forty watts in an old-fashioned lamp with a blue silk shade, right next to a woman leaning back in an overstuffed chair, chins up and eyes closed. There were other people in the place, men and women, about half a dozen, but they were all keeping quiet.

He was about to get up and go when the woman in the chair began groaning and spitting, and heaving herself around till the skinny guy who'd been turning out the lights had to come and hold her down. She quieted after awhile. "Who is there?" asked the skinny guy.

"Twixie," she said in a peanut-whistle soprano, and giggled.

"Are there any others there, who wish to speak to us?"

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"Yeff. *Wotf* of 'em."

The old malarkey. Soft soap and ectoplasm for the marks. And watch 'em eat it up!

The woman was speaking now in a deep masculine voice. "Things are very different here, Dottie. There's no way to tell you—I couldn't make you understand. But your mother and I are happy, very happy. Some day we'll all be together, and then you'll see. . . ."

He squirmed restlessly. If he could just make them hear him, he'd give them spirit messages that would curl their toenails. But there wasn't any percentage in trying. You could back a man into a corner and holler at him, but he would just faint or go hysterically blind and deaf.

He could do it again. He could leave them laid out like St. Valentine's Day. But there was no percentage in it. Fish in a barrel.

"Twixie" was back as he started to leave. "Theaw'f fomebody heaw wanf to talk to K. M. Iff im*paw*tant."

"Does anybody here have those initials?" the skinny guy asked. ". . . Well, go ahead anyway, Trixie."

"Thiff if the meffage. One dwink if haffa dwink, *two* dwinkf if a dwink too much, *fwee* dwinkf if *no* dwink. . . ."

Her voice faded to a ratsqueak behind him as he closed the door.

K. M. A coinfidenfe. But one drink was half a drink, all right—or eight, or ten. He went off down the hollow streets, looking for a bedtime bottle.

When he got home with it he had to fight his way into the sitting room through a nightmare of twisted paper streamers thumbtacked to the walls, the door, the ceiling, everywhere. There was a kind of thronelike business over at the side of the room that he had to look twice to recognize as a straight-backed chair on top of the coffee table; it was draped with satin from the windows and crumply sheets of aluminum foil, red giftwrap, pasted-on gold stars and festoons of what could only be pink toilet paper from the bathroom.

Nancy got down off it, switching her silver-spangled hips to make the ostrich plumes wag. She didn't look at him. She slow-marched across the room, arms out stiffly, little fingers curled, and put the playing arm down on a record that was already spinning in a portable phonograph. The gain was up all the way: it blasted at him, "A PRETTY GIRL . . ."

She rustled slowly back to her throne and climbed up again, graceful as an ape in her high heels, and sat there deadpan, her skin powdered white except for two fever-spots on her cheekbones, silver-paper crown tipsy on her head, a battered scepter in her hands.

Kip sneezed, fumbled in an empty pocket, and wiped his nose on his sleeve. There were streamers crisscrossing the hall doorway,

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and it looked like too long a trip anyhow. He sat or fell, got his back to the wall, and scratched the worst and newest of his itches before he tilted the bottle up.

When it swung down again, sooner than he wanted, the door was opening. He got it in focus and tracked it, and it was Angelica coming in, leaning like a masthead over the slanty floor, lost in a mink jacket with the price tag still on it; embroidered slacks under that and the blank black umbilicus of a press camera gawping in between.

Angelica had about a million pictures of local officials in embarrassing poses, some politically compromising, some ludicrous, some lewd; her room was full of them. She had tried leaving them on her boss's desk, in newspaper morgues, on bus seats; nobody ever saw them, they were kicked around and thrown out with the garbage, but she kept on taking them just the same.

The rest of her time she spent shopping; all the space in her room that wasn't full of pictures was overflowing with minks and ermines, Paris fashions, solitaires, necklaces, brooches and money, crisp in paper cummerbunds. She talked about moving a lot, but stayed, for the reason they all did: you had to have somebody to talk to, or you'd go crazier than you were.

"What's *this?*" she said, sweeping a strand of streamer aside, and took a long look at Kip and another at Nancy. "The wino and the looney," she said wearily, but with her throat pulsing hard against the blather of the phonograph.

". . . JUST LIKE A PRETTY TUNE," the record screamed. It delivered itself of a final orchestral blurp, shut up, and began to skritch quietly to itself. Nancy climbed down off her throne.

"Turn it *off,*" said Angelica.

Nancy kept going, a traveling waxworks. She put the needle back on the lead-in groove and turned around, but before the thing could let out a squawk Angelica was there, lifting it off again. Nancy turned once more and came back.

"Look," said Angelica, "I've had a hard day—"

Nancy put the needle on.

Angelica yanked it off, lifted the record clear and whanged it into a dozen pieces against the phonograph lid. "—and I'm *tired,*" she said. "Now do you understand?"

Nancy said nothing. She took the camera in both hands and hopped backwards, the strap pulling Angelica along with it till it slipped over her head. She dropped the camera and got in one kick before Angelica hit her low and they rolled over together, hands clawing for hair, shrieking like broken hinges.

Kip found the doorframe behind him and climbed it unsteadily. He sorted out his directions again, got to the middle of the floor and leaned for a grip on Angelica.

She was slippery as a fish inside that coat, but he got a double hand-

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ful of fur and heaved her up kicking. Then somebody tripped him and he landed hard on the camera with warm flesh kneeing the daylights out of him. When he tried to sit up an elbow caught him under the chin, and on the way down again fingernails raked across his nose. The floor went crump against his skull, like a carpet-covered brickbat.

When he knew which way was up again, he crawled out from under, but the door he opened was the wrong one and he was sick in the hall.

Somebody kicked a garbage can and the echoes tolled down the dark street.

Kip sat on the cold stone steps with his head in his hands, the night air feathering through his fingers, listening to the emptiness inside him. He was sick lonely drunk, and his head was a bruise, but all the voices were gone; he was a hollow house again, grimed and hollow, hollow and cold.

Too much for them. Wanted a fight but couldn't take the lumps; wanted the drunk but not the very sick.

Or maybe they were just ready to go. None of them stayed long, any more; he'd had—how many gangs of them since Tuesday? Lost count.

But it never took long to replace them, either.

So he sat, in his five minutes of sanity, and faced the thing he didn't want to remember he didn't want to know.

Angelica.

He knew already what was happening to him; had known for a long time. Every new invasion was scummier than the last; he was getting warts and wrinkles and hickeys and heartburn and dandruff and scabby patches and ingrown toenails and probably worse to come. He was a run-down old mansion, subdivided into cold-water flats and then hall bedrooms, full of transients with holes in their socks. He had been a valuable property once, and his owners had taken care of him. Now he was depreciating. All right.

Down the rocky road to ruin. There was no use trying to kick them out any more, there wasn't time enough and they went when they were ready, anyhow. The way he was now, all he could do was hang onto the little scrap they had left him of himself, fight them off when they had something particularly scurvy for him to do. And soon enough, he wouldn't even be able to do that. Good-bye sKrap; hello zombie.

And all that he had accepted. Because he was a coward, probably.

But Angelica.

Angelica had been following him down that road step by step, thoroughbred to cur, saint to slime. And now that he spelled it out for himself he realized he had known it all the time, it was obvious enough: She was possessed

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too; so was Nancy, and he couldn't prove it, but he knew in his guts that so was nearly *everybody.*

When you thought about how many people had died on this planet since Ug the Caveman, and how few of them would qualify for any heavenly establishment that there happened to be, it was a wonder they weren't swarming in every living human skull like maggots in offal.

How many damned souls could dance on a pinhead?

And what was he going to *do?* Good God, no wonder they had quarantined him, he was a carrier of infection. No. He was a run-down house, and he was lowering the values of all the real estate around him, the whole neighborhood. *And the neighborhood was Angelica and Nancy.*

Nancy didn't seem much changed—she was back to subnormal, was all, after that one day when she'd pulled herself together with both hands to help him. Maybe her tenants were the old maids, too stubborn to move, who live on in the old house when all around them has gone to tenements and weeds. But Angelica's weren't.

Slum clearance.

When a neighborhood starts downhill, can you stop it? Sometimes. Maybe.

If you tear down the right house.

Drunk . . . Thoughts spinning in his head, smooth and fuzzy-bright, everything clear now except around the edges, but he was top-heavy and tangled and when he went to stand up, his knees bent the wrong way. Couldn't find the drug store without a searchlight . . . couldn't see to read the labels, find out what was poison. And his time was running out.

Up the steps, skinning his knee when he fell. Across the lobby by deadreckoning, mothball and dust smell in his nostrils, and up the stairs because you couldn't get lost on a staircase as long as you could tell up from down; and because there would have to be something in the suite, razor blade, something; and if there wasn't, there would be the window.

And, all right, because he wanted to see them again before he died. Both of them, Angelica and Nancy, the woman he'd loved and the woman who'd loved him. All the world there was.

The sitting room was dark except when the reflected pink glow of a neon sign flickered into it. He lurched around the wreck of Nancy's throne and plunged into the cold hollow behind the couch, padding at the floor for his forgotten duffel bag. Hypo ought to be still in there; good as anything, if he could find the vein—barrelful of air, embolism, stop the heart quick and clean.

There was the bag, and the hypo wasn't in it, nothing but a bottle too big to have anything useful inside. He held it up to the

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window and squinted at it. Not drugs; what?

Prune juice and vitamin. That was right; he'd put the thing in the bag along with all the other junk for no reason except he didn't want to leave it behind. And here it was.

"One drink is half a drink . . ."

Who—? Oh, sure, the spirit message. Meaning the vitamin? K. M., Kip Morgan, one drink is half a drink—

"Two drinks is a drink too much . . ."

Sure. Why not? Little blue people sitting in the driver's seat in Madame Rayma's head, too. The wraiths of spiritualists; there was a laugh for you if you had room for it; making up that godawful childish gabble, contradicting each other sixty miles a minute—and once in a while, once in a long while passing on a message that meant something.

That would be what *they* wanted, too—*"they," the* things that made the quarantine to keep him from telling what he knew. *A drink too much.* The last one.

Simple: An overdose of the vitamin would be poison.

With the cap off, he hesitated. Call them in? What for, to make a deathbed speech, ten immortal words with a hiccup in the middle?

The monkeys had died in convulsions. The hell with it, the hell with it, he didn't have time to be nice.

He hesitated again. After he corked off, with his soul the dirty gray it no doubt was by now, would he find himself roosting in somebody's fusty cranium, scrabbling among the old habits and desires?

Ask me no questions and I'll tell you no lies. Never mind where the stuff comes from or what it's going to do to you; it's right off the bathtub; if you've got a weak stomach, hold your nose.

He put the bottle up, filled his mouth and swallowed. It went down like bile coming up, and some of it got caught in his windpipe.

Choking, he reeled to his knees and swept the lamp off the end table, the cord gripping him in the middle as he fell. He let it all go, legs, arms and the whole articulated bundle of guts: sorry now with a choked sorrow and glad with a bitter gladness that he was about to be rid of it.

He was beginning to feel a little dizzy and numb, and if this was dying it wasn't bad. But it seemed to him that this was a way he had felt once before; he was afraid of it without knowing why. Then he heard the murmuring begin, and even then he didn't understand, though he sensed that the voices weren't inside him—

The ceiling light blinked on. Nancy stood in the hall doorway looking down at him. And on her shoulders crouched four tiny smoke-blue figures.

Two on the left, witchwives with trap-thin mouths, chanting, *"It's a sin! It's a sin!"*

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Two on the right, sluttish and slavering: *"Do it!* Do *it!"*

The voices swelled, more of them and more, from every direction—through the walls, the floor, the ceiling.

Whatever Nancy was saying was drowned in the din. Now he saw Angelica coming up behind her, and *she* had ghostly shapes crowding her shoulders. . . .

A drink too much!

The street was no better. Hands futilely over his ears, mouth open in a silent shout, he ran loose-kneed and wobbling to his parked car; tumbled in headfirst, started the engine on the third try, clashed gears and drove like a madman down Figueroa.

Instinct had chosen the direction; twenty-odd blocks later he came to sanctuary— the U. S. C. campus. He drove into it as far as he could go and stopped, trembling over the wheel.

He was inhabited again. He could hear the nasty little voices yattering away inside him; but that was a thing he was used to, and by contrast it was almost pleasant.

He knew now that there were worse things than being infested by a corporal's guard of barflies, alley thugs and panders. It was a swift short slide down to where he was; there were depths below that as black and hollow as a starless night, and people *lived* there, married and had children, paid their rent and taxes, walked in the free air; and nobody hauled them off to shock treatments or manacles!

What it must be like to have the curse of hearing in a hospital for the insane, he was unable to imagine.

It was no longer any cause for wonder that the books most "normal" people bought and the movies they paid to see were strictly and by definition psychoneurotic; nor that the laws made by the people for the people were an Iron Maiden, nor that a streetful of citizens could erupt into a mob. The wonder was that there was any sanity in the universe.

Think. Think.

While one part of his mind scurried like a trapped rat, another part was coldly and curiously turning over the jumbled jigsaw pieces of his world, matching them to make a new pattern:

The curious blankness you saw behind the eyes of John Doe, the colorless, not-smart-not-stupid man who sold you groceries or filled your gas tank; the automatic ABC responses and the meaningless smile. X marks my window: a transient hotel. Too many tenants; *too many faces superimposed make a blur.*

Déjà vu. You had never been there before; but somebody had.

Compulsive drinkers, murderers, desk-tidiers: they got no pleasure from it. *But somebody did.*

Allergies, functional disorders, phobias, "psychosomatic" illnesses. Symptoms of struggle between the

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possessor and the possessed. Or: the tenant was a cotton farmer and hates wool, a housewife and hates dust, a bird-lover and hates cats.

The even dispositions, the inner assurance of people in caste trades and family seats. Memory is not inherited, but tenants can be, and over generations, inhabiting members of the same family, they might shake down into stable, well-adjusted groups that would cause no trouble.

The high incidence of neurosis, insecurity feelings, melancholia and all the skull-choppers' bag of tricks in world-cities, where established groups of tenants break and mingle explosively.

The unearthly peace that you sometimes found in people who had suffered long and severely. Solution: to be unpossessed, be a house that nobody would want to own.

Or jump out a window; or cut your throat with a razor blade.

Not yet. Follow the argument, add up the data.

If there isn't an answer, the quarantine was for nothing.

He had been thinking about the bottom half of the human pyramid, because that was where he was now and because the algebraic pressures squeezed out monsters there; it was natural enough. What about the top half?

There were people who had twisted circuits inside their heads, quirks that made them automatically the wrong shape to fit any situation, square when they ought to be round and round when they ought to be square. And there were people who slipped through life as if all the doors had been cut and hung especially for them. The people who were born to prosperous parents in a prosperous country; who had sound bones and clear skins and white teeth; who never had to worry about the price of a meal; who never missed trains unless there was going to be a wreck; who lived a long time and enjoyed it all. The tall, straight, unwrinkled, lucky people.

The carefully built and tended mansions of the idle dead.

Item: The quarantine was not a thing imposed spontaneously by each new gang of tenants; it couldn't be, it worked too smoothly. It was organized, and that meant that somewhere there had to be an organizer.

Where?

Why, in the handsomest, the healthiest, the richest and happiest human being . . .

The torrent of voices rustled down over him again as soon as he drove out of the campus. Each tiny crepitant note was distinct and clear; it was no good shutting his ears against them and they knifed through any distraction the mind made; he had to listen, writhing behind the wheel.

Rip her with your
die in agony for they are

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dripping raw and eat it
trying to breathe while
where it's dark and the rats
tell him to his face
fire and KILL THEM ALL

Thicker and thicker, more and more, as if the street were tilting downward into the more and more intolerable pressures of an ocean of voices. Straight back into the center, to the hotel, because that was where . . .

But he mustn't think that.

Into the lobby, up the stairs against a turbulent river of voices. Lean against the door, heavy and slow, seaweed tendrils of sound weaving around him . . .

In the underwater darkness he found the hard cold shape and put it in his pocket. Forget it.

When the light went on in Angelica's room she sat up in bed, her mouth opening with hard lines around it, but it closed again when she saw his face. He dropped to his knees beside the stacks of photographs and spilled them onto the floor in a glossy kaleidoscope of faces and bosoms.

He pawed one out, then another. He tossed photographs aside in fluttering windrows, scrabbled again, stirred the mass with both hands. At last he had a thin sheaf of pictures in one fist; with the other hand he reached out to the dressing table, dragged Angelica's handbag off and shook it upside down.

He picked a fountain pen out of the resulting tangle, circled a face on each of his photographs, lurched to his feet and shoved the handful at Angelica.

"Addresses," he said. "On the backs."

She hesitated. He leaned closer. "Do it *now.*"

She glanced at the top picture, flipped it over, scribbled on the back, and went through the rest of the sheaf in the same way.

When he took them, she gave him a look of unwilling respect and said, "What for?"

He didn't answer. The effort was too much; he was half-drowned again in the surge of voices, staggering out into the hall, down the murmurous stairs, into the night.

The world-famous director was not at home. Neither was the foreign-born, much-married writer, and Angelica's notation for the rising young beauty queen said only "H'wood Hills, off Cahuenga." But Taylor Spotswood III was asleep in his bed.

Spotswood, dark-haired and muscled like a swimmer, was built on a scale that dwarfed Kip, and the bed was big enough for six of him. Kip inched across the laundry-slick sheets and got the pad soaked with chloroform over his mouth and nose.

When his breathing slackened, the room was very quiet. Silver moonlight dappled the floor. It was a big sturdy house that stood on its own hundred acres, the servants were off in another wing, and the only voices Kip could hear came

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from the unconscious man's body. *". . . verna effrenata mmmmmmm tant pis, on ne peut pas mmm captus membris mmmmmm delenda est."*

"Come out," said Kip through dry lips. "I want to talk to you." He put the point of his open clasp-knife to the sleeping giant's chest and exerted a gentle pressure.

Three tiny heads popped into sight, glowing a swampfire blue in the darkness. They might have been brothers; all three had the same spiderweb tracery of microsharp wrinkles, the same lipless mouths, the same brilliant eyes. One turned to the others and remarked, *"Nequissimus."* Another answered, *"Heu nefas!"* and added a short sentence in a totally unfamiliar language, at which all three briefly showed smiles like half-healed wounds; and the third asked coolly, "What do you wish?"

"You know what I want," said Kip, his hand white-knuckled on the knife handle. "Don't waste time."

"We have all the time in the world," said the spokesman simply. "You cannot cut any of it away with that tool. Therefore, be more respectful." And his eyes glowed like spectral cigarette-ends.

"I can send you househunting, though," said Kip. "But the knife is just to make sure you hold still and listen. This is what I brought to bargain with." He showed them a little bottle that had once contained sedative capsules; now it was full of a murky brown fluid.

The three glared at him, but the spokesman's voice was as cold and dry as ever. "Even supposing that the power to grant your desire exists, which is absurd, we are only three retired gentlemen; we could not help you. What have you done with the rest of that, by the way?"

"Mailed it to myself," said Kip. "The power to make me and my friends invisible to every living soul in the city of Los Angeles exists, and if that's absurd, laugh now and get it over with. Somebody was afraid I'd tell what this stuff does. The same somebody only has to say frog and every spook in sight jumps twice. And if you're not that somebody, you're as near as I can get and you'll have to do. I think you are. I think the longer a tenant hangs around, the more he learns about possession and dispossession, till the oldest ones can kick anybody out who doesn't toe the line. I think you're the oldest; if there were ever any older than you, they broke down into ash and stink a long time ago. But whether I'm right or wrong, either there'll be a new system of housing allotments —with *everybody* getting the tenants who'll do him the least harm and the most good—or I'll pour this stuff down the throat of your friend here. And when you move, as you'll have to, I'll follow you wherever you go. I'll find you. I'll find you and I'll do it again. If I run out of the vitamin, I'll make

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more. And even if you do get out of my reach, I'll make such a stink and I'll give so many people the sight and the hearing that I'll pull your whole damned applecart down around your ears. Now. *Yes or no.*"

The three whispered together with a sound like dry twigs cracking in the wind. The spokesman said, "We are disposed to deal gently with you, but a bargain that is all upon one side is no bargain. Next, the terms you propose are beyond reason and your need. We will restore yourself and the two women, no more, in exchange for certain services. Think how you answer; the offer will be made only once. And eternity is long."

"Longer than common to a houseless haunt," said Kip. "Don't talk barroom law to me; this is a *pactum donationis,* since you like Latin, or you can call it blackmail, I don't care. All or nothing. One." He pried open the sleeping man's jaws. "Two." He lifted the bottle and twirled the cap loose with his thumb.

The three consulted with a glance.

"We agree," said the spokesman angrily.

It was too easy. "Swear," said Kip, "by—" By what?

A whisper stirred in his mind, perhaps from the same—person—who had spoken through Madame Rayma; and he thought: *George?*

"Swear," he said, *"by your hope of oblivion."*

The old ones had their ounce of revenge, after all; nature abhors a *pactum donationis.* The quarantine lifted when Kip left the house, newly equipped with a set of four chatty but good-natured ghosts; the caretaker spotted him, chased him to his car, and the State cops ran him down just outside the city limits. Nancy and Angelica were discovered by an astonished bellhop, and they were all three a one-day wonder in the newspapers: LAW STUDENT CRASHES ESTATE WHILE SWEETHEARTS SQUAT IN BRIDAL SUITE. Kip and Angelica lost their jobs; Nancy's mother threw seventeen successive catfits and placed herself under the care of a gentleman who combined Dianetics with Yoga.

Kip got out of jail last; they hadn't been able to prove that he had entered the building or chloroformed the owner, but they had thrown the book at him for concealed weapons (the claspknife), leaving the scene of an accident (a broken gate) and resisting arrest.

He found Angelica packing. She had, she told him curtly, been offered a wonderful job with a trade mission in Chile. It was a great opportunity; it could lead almost anywhere. She was the same old heartsqueezing Angelica, compact, graceful, honest, assured. But there was something wrong. She had hardened, she was a bisque doll with Swiss watchworks inside.

He listened to the voices that

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came from her, he had been waiting for just that; he wanted to be sure.

And there was nothing wrong with the voices.

The bargain had been kept; there was no one inside Angelica whispering songs of ambition to her inner ear.

There never had been.

That was Angelica; that was what she was *really* like in the deepest deep of herself, and the only difference now was that she was free to be it, without scruples or hesitations.

And the ounce of revenge was a pound.

. . . Until he met a redhead waiting in the pro shop at the country club when he went back to collect his things.

She had red hair: not carrot-color, and not henna-color, but the real, dark, glossy mahogany red that you see once in a lifetime. And she had the pale skin that goes with it, clear and fine, with that rose-in-snow flush glowing through it. And her eyes were big and bright, and about to brim over.

He took a step toward her; there was a hurting in his throat. He said, *"Nancy?"*

She said, "Kip," the one word, and he knew; it was all there. It was the same voice that had said *"f of t"* when it meant more than "the love of God"; those were the same hands, hardly changed though they were slender now where they had been thin, that had been about him all the time, praying, yearning to help. It was the same love, not dammed up now but flowing free.

A little later, he took the bottle out of his pocket; the police had given it back to him finally, not being able to find any poison, illegal drug or other contraband in it. It had just about a mouthful in it: one drink.

He had listened to Nancy's voices; he knew all he had to know.

He swallowed it.

Three drinks is no drink. . . .

The voices stopped.

A REACTION TO SCIENCE FICTION

The National Review, the magazine edited by William F. Buckley, Jr., which has rapidly become the spokesman for the more literate Right, turned a critical eye on science fiction in its May 3, 1958 issue in an article by SF aficionado, C. Robert Morse. We quote:

"SF is of course largely preoccupied with the future. But do not suppose these dreams of things to come are mere giddy fancies. To foretell the future; you must look more closely at the present and the past. Give a man a space helmet and he will tell you the truth. Looking back through his plastic bubble toward Mother Terra he will focus on our present world through a burning glass. The method of fantasy (so akin to satire) makes possible the sharpest social comment, stated in the most economical way."

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robert goddard - space pioneer

by Dr. G. Edward Pendray

If we'd listened to Robert H. Goddard, we would hold the unchallenged lead today in rockets and satellites.

A HUGE rocket thunders from its launshing pad at Cape Canaveral to hurl a man-made moon into orbit.

Space is no longer a barrier, but a bridge to other worlds.

It is ironic that so dramatic a breakthrough in man's ancient yearning to explore the reaches beyond his own planet should have originated nearly half a century ago in the scholarly mind of a brilliant, self-effacing American physicist, stigmatized in his own time, except by a few far-sighted people, as a "visionary" and "moon-man."

But the crowning irony is that if his own countrymen had listened to Dr. Robert Hutchings Goddard, the United States today would be 18 to 20 years ahead of its present position in its race with Soviet Russia into space. There would, in fact, have been no race.

As it was, Harry F. Guggenheim, President of The Daniel and Florence Guggenheim Foundation, who tried, with Goddard, to interest our Armed Forces in the potential of rockets in 1940, recalls that they got a polite "brush-off" which cost us an unchallenged lead in rockets and satellites today. Tragically, Goddard

Rocket pioneer Dr. G. Edward Pendray has been a top writer and lecturer on rockets for over 30 years. One of the founders of the American Rocket Society, and author of THE COMING AGE OF ROCKET POWER, *he is consultant on rockets to the Daniel and Florence Guggenheim Foundation and to the Committee on Astronautics and Space Exploration, House of Representatives.*

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lived only long enough to see his dream of man's conquest of space come to fruition in the form of a terrible new weapon—the German V-2 rocket—in the hands of an enemy.

In May, 1945, only three months before Goddard's death, captured German rocket experts were asked by U. S. Army specialists about the V-2's that rained death on London in the last months of World War II. To the Americans' surprise, a member of the German group replied:

"You have the man in your country who knows all about rockets, and from whom we got our ideas—Robert H. Goddard."

Robert Goddard's story reads rather like a novel by Jules Verne, but minus the glory which crowned the struggles of Verne's heroes. The "father of space travel" won his battle to prove that man could send a rocket hurtling into space. But the world-wide fame he so richly earned never came in his own lifetime.

Quietly and diligently, Goddard worked for decades to perfect his ideas and to convince skeptics, including leaders in the U. S. Government and Armed Forces, of their tremendous implications. Among other advances, Goddard was the first man to:

- Develop (in 1918) a projectile rocket, prototype of the World War II "bazooka" and forerunner of present solid-fuel rockets.
- Develop and shoot a liquid-fuel rocket (March 16, 1926, at Auburn, Mass.).
- Shoot a rocket faster than sound (1935, near Roswell, New Mexico).
- Develop a gyroscopic steering apparatus for rockets.
- Patent the idea of a "step" or multi-stage rocket.
- Offer a practical plan to explore high altitudes with rockets, and possibly shoot away from the earth.
- Offer the first sound mathematical theory of rocket propulsion and flight.
- Prove, mathematically and by actual test, that a rocket not only works—but works better—in a vacuum, and so can operate in space.

Goddard's records, carefully kept through the years, reveal the exhaustive labors that went into one momentous breakthrough after another. They also reveal disappointments which would have discouraged a less optimistic and happy man than Goddard. Typically, in the midst of a difficult research problem, he once said to his wife: "If it were easy, someone would have done it long ago."

Born in Worcester, Mass., on October 5, 1882, Robert Goddard was a quiet, serious-minded youth who soon showed the quick, probing mind of the scientist. One of the first areas of scientific explora-

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tion to draw his attention, and one which was to hold it with increasing devotion throughout his lifetime, was the possibility of reaching great heights—even space itself—through rocket power.

It was nearly 60 years ago, in 1899, that 17-year-old Robert Goddard began his first serious theorizing about rockets. From 1904 to 1908, as a student specializing in physics at the Worcester Polytechnic Institute, he continued to make systematic notes of ideas that might make possible the attainment of great altitudes, among them the use of the magnetic field of the earth, electric guns, the repulsion of charged particles, artificially stimulated radioactivity, streams of ions, and solar energy.

He was graduated from the Institute in 1908 with a B.S. degree, and entered Clark University at Worcester, from which he received his master's degree in 1910 and his Ph. D. in 1911.

Goddard's first real thrill of discovery came while he was a research fellow at Princeton University in 1912-13. His calculations showed that relatively little fuel was needed to lift a payload to great heights by rocket power, if a motor could be devised to use fuel efficiently. These computations were later to form the basis of a paper entitled "A Method of Reaching Extreme Altitudes," published in 1919 by the Smithsonian Institution as one of two classic papers in which Goddard laid the foundation for nearly all of today's developments in rocketry and jet propulsion.

After returning to Clark in 1914, the young physicist began to experiment in earnest the following year, starting with ship's rockets and continuing with others which he made himself. Two years later the Smithsonian Institution came to his aid with a small grant of funds to carry on his work.

When the United States entered World War I in 1917, Dr. Goddard volunteered his services and was assigned to explore the military possibilities of rockets. He developed a trajectory rocket which fired intermittently, with charges injected into the combustion chamber like cartridges in a repeating rifle. He also developed several types of projectile rockets to be fired at tanks and other objectives from a launching tube held in the hands and steadied by two legs.

These weapons were demonstrated to representatives of the Signal Corps, Air Corps and Army Ordnance at Aberdeen Proving Grounds on November 6 and 7, 1918. The demonstrations were successful, but a few days later the Armistice ended the war and the Army shelved the weapons. It was not until World War II that Goddard's projectile rocket, available in 1918, was dusted off and emerged as the now-famous "bazooka."

Following the war, publication of his historic paper, "A Method of Reaching Extreme Altitudes," aroused considerable attention, some

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of it scornful. The New York *Times,* which was to praise Goddard's work a decade later, ridiculed his contention that a rocket would work in a vacuum.

"That Professor Goddard with his 'chair' at Clark College and the countenancing of the Smithsonian Institution does not know the relation of action to reaction, and of the need to have something better than a vacuum against which to react—to say that would be absurd," scoffed the *Times.* "Of course, he only seems to lack the knowledge ladled out daily in high schools. But there are such things as intentional mistakes or oversights, and, as it happens, Jules Verne, who also knew a thing or two in assorted sciences—and had, besides, a surprising amount of prophetic power—deliberately seemed to make the same mistake . . ."

Despite such gibes, Goddard pushed doggedly ahead.

For the most part, Goddard's tireless work during the Twenties attracted little interest. But toward the end of the decade, what may yet prove to be the most momentous rocket shot in history took place.

On July 17, 1929, in a field near Auburn, Mass., Goddard fired a liquid fuel rocket whose repercussions, much wider than the quiet professor wished at the time, will continue to be felt for centuries.

The 11-foot rocket rose with a roar to a height of 90 feet, nosed over, and traveled horizontally for 171 feet before returning to earth. It was a successful shot, and Goddard was pleased. Not so the townfolk living nearby. In a dispatch the next morning, the *Times* reported:

"The noise was such that scores of residents called Police Headquarters, saying that an airplane was shooting along afire. Two police ambulances scoured the section looking for victims, and an airplane left Grafton Airport to aid the search."

Another paper headlined its story: "Moon Rocket Misses Target by 238,799½ Miles."

The distressed professor also found himself under investigation by the Massachusetts State fire marshal, who frowned on further shots with such an infernal device.

Luckily, one of those who read of this fateful shot was Charles A. Lindbergh. The imagination of the nation's No. 1 hero of the day was stirred sufficiently to bring him to Worcester to see what Goddard was up to. Deeply impressed, he reported what he had seen and heard to his friend Harry F. Guggenheim, a Navy flier in World War I, and President of The Daniel Guggenheim Fund for the Promotion of Aeronautics, endowed and named for his father, Daniel Guggenheim, an ardent supporter of aviation research and development. Guggenheim, then serving as U. S. Ambassador to Cuba, suggested that Lindbergh meet with his father. Daniel Guggenheim's imagination was stirred, as Lindbergh's had been, by the rocket experiments. As a result he

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granted Dr. Goddard funds which enabled him to buy badly needed equipment and take a two-year leave from Clark to carry on his work.

Searching for an open area where rockets could be shot without endangering lives and property, Goddard settled on the Mescalero Ranch near Roswell, New Mexico, and proceeded to make history. As it proved later, when the United States entered World War II using the comparatively primitive application of solid-propellant rocket power which Goddard had developed nearly a quarter of a century earlier, the history which Goddard was making had attracted far more attention in Hitler's Germany than it did at home.

Regarding the early struggles of Goddard and his few staunch supporters to win recognition for rockets from the U. S. Armed Forces, Harry Guggenheim recalls that he arranged early in 1940 for Goddard and himself to meet with the Chiefs of Army Ordnance, the Army Air Corps, and the Navy's Bureau of Aeronautics, in order to place all their research, developments, patents and organization at the Government's disposal.

"After a sympathetic reception," Mr. Guggenheim recalls, "we were asked to present our project in detail to their representatives at a joint conference on May 28, 1940. On hearing our story, the representative of Army Ordnance said: 'All very interesting, but we don't think rockets will play any part in this war; we believe that this war is going to be fought with the trench mortar.'

"However, the representatives of Naval Aviation and the Army Air Corps said they thought there might be a specialized field in which Dr. Goddard's work could be useful—jet-assisted takeoffs. And throughout the war Dr. Goddard was almost entirely restricted to the development of JATO for the Navy and the Army Air Corps."

As we know now, the Germans at this time were well advanced in developing what ultimately became the V-2 rocket. But the irony of this situation only became apparent four years later.

"In December, 1944, a few months after the V-2 began falling on London, Goddard visited me at Mercer Field, New Jersey, where I was then stationed as commanding officer of a Naval Air facility," Mr. Guggenheim recounts. "He gave me a photograph of one of his pioneering liquid fuel rockets taken in the Spring of 1941, and pointed out the features in common with the V-2. I was so startled by the similarity that I turned the photograph over and asked him to put a brief inscription on its back. Dr. Goddard wrote: 'Rocket produced in New Mexico in the spring of 1941, under the Daniel and Florence Guggenheim Foundation. It is practically identical with the German V-2 rocket.'"

Thus, by the Spring of 1941 Goddard had succeeded almost

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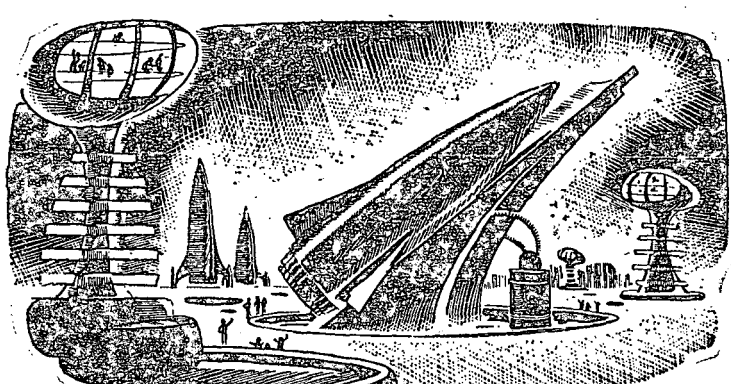
single-handedly in building a rocket nearly identical with that which the Germans, working since 1929 on military rockets as an official Army project, developed about 18 months later. This rocket is now on display at the National Air Museum of the Smithsonian Institution in Washington, D. C.

Robert Goddard died on August 10, 1945, after a throat operation. If ever a man had the right in his last days to say to his fellow countrymen, "I told you so," it was Goddard. But he was not the man to hurl recriminations for the apathy that had greeted his own work. His concern lay, rather, in doing what he could to make sure that those who followed would not be similarly ridiculed and ignored.

A number of memorials to Goddard's genius exist today, among them Robert H. Goddard Professorships endowed by the Guggenheim Foundation at the Guggenheim Jet Propulsion Centers at Princeton University and California Institute of Technology. But the most eloquent testimonials are the modern descendants of the Goddard rocket, such as the Vanguard and Jupiter-C with which the United States sent earth satellites spinning into space.

"Tomorrow the world!" Such was the vain boast of Nazi Germany, which first incorporated Goddard's ideas about high-altitude rockets into a workable weapon of war. With far more truth and modesty, a fitting epitaph for the father of space flight might well read: "Tomorrow, other worlds."



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glossary of terms

by . . . Jack Lewis

Do you—as a writer—know the tools of your trade? A serious discussion of an extremely serious subject.

ATOMIC BOMB. An early type weapon used during the small-scale wars of the twentieth century. Although extremely limited in efficiency, the atomic bomb is interesting from a historical standpoint; being the first of the nuclear weapons, and in a sense the forerunner of the solar demolition and galactic obliteration devices which have been used so effectively during the long series of wars in which the planet Sol III has participated.

Never use this one in serious science fiction unless to cope with relatively minor skirmishes involving not more than a single solar system.

BEAUTIFUL GIRL. A phenomenon sometimes found in the far-flung outposts of deep space or in periods of time not less than three hundred years in the future. Is usually blonde, fair-skinned, extremely well-developed, and answers to names that are best produced by allowing a three-year-old child to peck at random on a typewriter.

No names are permitted that the reader is able to pronounce.

BLUFFONICS. The science by which a science fiction writer is

Originally titled, GLOSSARY OF TERMS FOR SCIENCE FICTION WRITERS, *this brief article takes up a problem that has bothered many writers. Jack Lewis, former New Yorker now living in Kansas City, is the author of* CALLING ALL ALIENS *(March 1958 FU) and* THE STUDENTS *(April 1957 FU).*

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able to cram a flat impossibility down the throats of his readers by the use of meaningless gibberish and hypothetical double-talk.

The use of bluffonics is particularly effective in stories of the gadget-type, which require explanation of anti-gravity devices, advanced cybernetics, and various paraphernalia associated with the construction of devices employing the use of the fourth dimension.

CREDIT. A monetary unit designed to replace the various forms of currency used prior to the First Galactic Federation. Although the credit is a most stable form of currency its widespread use was once viewed with alarm and suspicion on many planets. It was not, in fact, until the United States World Congress authorized its use for interplanetary aid purposes that it became readily accepted throughout the entire Galaxy despite some futile opposition from disorganized groups on Sol III who called themselves taxpayers.

DISINTEGRATOR RAY. A lethal weapon of the fission-beam type which when properly used is capable of shattering molecular structure. Though used during the early days of space travel, (and still a great favorite of cover artists) the disintegrator ray has been largely replaced by needle or paralysis-type weapons, which while considerably less destructive are more compact and generally restricted in efficiency to living matter only.

However, in situations where nothing short of complete obliteration is practical, it is still considered ethical to extricate your characters from perilous situations through the use of this device.

Care, of course, should be exercised in its application and use. Approximately once to each two or three printed pages of your story is ample to have your hero looking down the barrel of one of these instruments.

FORCE FIELD. Here's a dandy little gadget to have around any time you find your hero getting himself into a seemingly-inescapable situation. Extremely versatile in its use and application, the force field operates on the principle of setting up an invisible barrier around an object thereby making it completely invulnerable to any force seeking to penetrate it.

As a protection measure, the force field is unparalleled. Its broad beam-sweep may be magnified or condensed thereby providing maximum protection against ray guns, disintegrator pistols, and various other lethal weapons which threaten bodily harm to your story-characters. And its effectiveness is best demonstrated by the fact that a competent operator has been known to completely isolate an entire Class D Star System with the aid of this device.

HYPERSPACE. That section of interdimensional space which is warp-

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ed in such a manner that it tends to shorten the distance between the objects it separates.

The discovery of hyperspace marked a great boon to science fiction writers since it not only made obsolete the ridiculous notion that the shortest distance between two points was in a straight line, but at the same time enabled authors to work their way around awkward stumbling-blocks like the Einstein equations and the Fitzgerald contraction theory.

So widely accepted have journeys through hyperspace become, that all present-day spaceships come equipped with some sort of hyperspatial drive thereby enabling them to accomplish interstellar—and occasionally intergalactic-journeys with comparative ease.

PSIONICS. The science that deals with the application, properties of, and general data pertaining to, any and all events which fall into the category of mathematical impossibilities. (i.e.: The act of dealing four pat royal flushes on one deal; The act of throwing 79 straight passes at Las Vegas; The act of the Kansas City Athletics winning the American League pennant.)

To the skilled writer of science fiction, the merits of psionics are immediately obvious. No longer, for example, is it necessary to explain seemingly impossible accomplishments on the part of your protagonist. Instead—thanks to this handy, little catch-all science—it is permissible to simply pass-them-off as . . . "psionic phenomena."

TELEPATHY. A device by which various life-forms are able to communicate with each other without going through the boresome details of learning each other's language.

Of considerable interest is the curious fact that all worlds other than Sol III are presently inhabited by beings equipped with marked telepathic abilities—a fortunate coincidence indeed for s-f writers.

Just one word of caution. Your spacemen will not "talk" to aliens. Instead they will "send" or "receive impressions."

TIME WARP. An effect created by distorting the dimensions to a degree where matter will pass freely and readily into the past or future.

Although this phenomenon has been known to occur through a freak of nature, it is more frequently produced with the aid of a mechanical apparatus known as a "time machine" or "time selector."

Many makes and models of these instruments are currently available, best of which is probably the Westinghouse Unit which is capable of accommodating up to five persons and comes equipped with optional calibrated dials and automatic return mechanism.

The time warp is indispensable to science fiction writers, since it enables them to pass-off as "science fiction" material which would otherwise be classed as Grade B fantasy.

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shapes in the sky

by . . . Civilian Saucer Intelligence

CSI examines the writings and statements of Old Papa Fort and his children—arriving at some conclusions.

"SCIENCE is established preposterousness."

That aphorism appeared in a book published nearly forty years ago—a book that founded half a dozen new sciences. The title of the book was *The Book of the Damned,* and its author was Charles Fort. Among the disciplines that this great scientific pioneer launched on their slow upward climb from disregard and "damnation" toward eventual canonization by scientific orthodoxy was the one we now call "UFOlogy." It was Fort who discovered flying saucers—more than a quarter of a century before the term was invented in 1947—and perhaps it is not realized as generally as it ought to be that by 1919, when *The Book of the Damned* was published, he had a firm grasp of all of the most important things that we think we know today about these flying saucers, or UFOs.

"All progress is from the outrageous to the commonplace." Fort's "acceptances" on this subject, outrageous as they appeared to most of his readers at the time, have for the most part been overwhelmingly vindicated by the events that have forced themselves on the world's

CSI, in their latest column, written specially for this magazine, comment on the writings of Charles Fort and some of his spiritual—and considerably less spiritual—descendants. CSI of New York is a research group, publishing a newsletter on UFO sightings and holding occasional meetings.

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attention since 1947; and the time may now be foreseen when they will be accepted almost as a matter of course. Insensibly, they are metamorphosing from the "obviously preposterous" into the "established."

In scientific candor, or in filial piety, we self-styled UFOlogists of the present day should acknowledge ourselves descendants and disciples of Charles Fort. True, we have added much to the groundwork laid down so long ago by the founder of our fledgling science—but not so much as might be supposed; and many of the things that Fort failed to discern may well have come into existence only since his time. And in a few instances, Fortean "expressions" that were plausible enough in 1919 have lost their luster when viewed in the perspective of 1958. But of course Fort never expected all his arrows to hit the mark—far from it; he would doubtless be surprised to know how many of them have in fact struck the bull's eye.

Let us review Fort's "expressions" on the subject of flying saucers, to see how they have fared in the light of the post-1947 "UFO age." How much of his preposterousness can now be taken as established?

The following eight propositions summarize UFOlogy as originally laid down in the works of the discoverer of the UFO.

(1) *Unknown objects, apparently self-propelled, have repeatedly been seen in our skies.*

(2) *They are very diverse in appearance.* For example:

A gray disk with radial markings and a long hooked tail, seen for half an hour by the bark *Lady of the Lake* in March, 1870 (see drawing in *Book of the Damned*, Ch. 22).

A "headless monster, seemingly propelled by fin-like attachments" that circled over Crawfordsville, Indiana, in Sept., 1891, making such a noise that it woke up the Rev. G. W. Switzer (*Lo!*, Ch. 12).

A "square globe, flying the Stars and Stripes," seen in Peru about 1910 (*ibid.*).

A cigar-shaped object "with great wings, resembling those of an enormous butterfly, and brilliantly illuminated by two great searchlights," seen in many places in Texas and elsewhere in 1897 (*New Lands*, Ch. 28). Perhaps this was the same as the object "like a huge winged pig with webbed feet, casually inclining sideways" that flew over Wales in 1905 (*ibid.*, Ch. 30).

That the post-Fortean UFOs, too, have been most diverse in shape has been repeatedly stressed in the first articles of this series (FU, March and May, 1957), as well as in several of Ivan Sanderson's articles. Nevertheless, there do seem to be certain fairly frequently seen "types" nowadays—regularities that perhaps did not exist before the 1940's. (We will go into this in more detail subsequently, when we come to consider phenomena discovered only since Fort.)

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(3) *Some of these objects appear to be manufactured constructions.*

(4) *Since they are not man-made constructions, they must come from somewhere outside our planet.* "My own acceptance," said Fort, "is that super-geographical routes are traversed by torpedo-shaped super-constructions that have occasionally visited this earth's atmosphere. . . . We have data for thinking that a vessel, carrying something like a searchlight, visited this earth, and explored for several months" (BOD, Ch. 25); "If, in April, 1897, extra-mundane voyagers did visit this earth, likely enough they will visit again." (NL, Ch. 28.) This was Fort's first statement of the extraterrestrial theory; later, he discarded the limitation to "torpedo-shaped" (cigar-shaped) craft. Nowadays we may feel that the visits are not "occasional" but "constant": Fort's prediction that "likely enough they will visit again" has been fulfilled since 1947 with overwhelming prodigality.

(5) "Our expression is that there is an association between reported objects, like extra-mundane visitors, and *nearest approaches by the planet Venus to this earth*: Perhaps unfortunately this is our expression, because it makes for more restriction than we intend." (NL, Ch. 34.) This is one of Fort's few suggestions which time has failed to verify; in modern times, his Venus correlation has not been well sustained. Quite likely, in spite of his caution on this point, he was misled here by the spurious "UFO reports" that are invariably made by naïve observers whenever Venus is brilliant in the morning or evening sky.

More recently, many saucer researchers considered it as virtually a proven fact that there was an association between UFOs and the near approach of *Mars*; but the sighting lull in late 1956, when Mars was close, and the sighting wave in late 1957, when Mars was distant, knocked that idea on the head. At present the existence of any simple, predictable cycle in saucer phenomena is open to question.

As readers of Fort will recall, he was by no means prepared to concede that the picture of the universe presented by astronomy was even approximately correct, and he liked to imagine that there might be unknown "lands in the sky"—*not* distant planets suspended in space, but nearby places—which some of our visitors might call home. This cheerful heresy has fared even worse than the Venus correlation under the test of time. Radar has confirmed the distance of the moon, about which Fort had the deepest suspicions; and artificial satellites successfully hurled into Newtonian orbits around the earth have confirmed beyond all cavil the astronomers' conception of the earth as a sphere rotating in a void, wrapped in a shallow atmosphere and a deep gravitational field. So nowadays we seem to have no alternative: any foreign constructions in our skies must necessarily come from other

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planets—unless, of course, we want to talk about "other dimensions." As to that, we may follow Fort, who remarked, "I'm going to do myself some credit by not lugging in that particular way of showing that I don't know what I'm writing about."

(6) *In some cases, not-altogether-human occupants of these machines have been seen.* "Visitors . . . things or beings coming down to explore, and unable to stay down long. . . . However, I am now collecting data for a future expression—that some kinds of beings from outer space can adapt to our conditions, and have been seen, but have been supposed to be psychic phenomena . . . I expect some day to rationalize demonology, but just at present we are scarcely far enough advanced to go so far back." (BOD, Ch. 18 and 6; NL, Ch. 34).

Regrettably, the "future expression" never saw print, but the one instance that Fort did publish is strikingly similar to some of the "landing stories" of the modern era. In May, 1909, after a sharp wave of UFO sightings over the British Isles, a man named Lithbridge told newspapermen that he had seen a large tube-shaped object on the ground beside a road in the Caerphilly Mountains of southern Wales, in which were two men "wearing heavy fur overcoats," who spoke excitedly to each other in a foreign language and sailed away. (*Lo!*, Ch. 11.) Compare with this story the one told by M. Laugère, a French railwayman, on October 13, 1954. He said that during the night a 12-foot-long torpedo-shaped object had landed near the railway station at Montluçon, and that the pilot, a small man "covered with hair or wearing a long hairy overcoat," had addressed some incomprehensible words to him before entering the machine and taking off again. (Belfast *Telegraph*, Oct. 14.) Of course, both Mr. Lithbridge and M. Laugère may have been lying; still, the similarity of these lies 45 years apart is striking.

The modern or post-Fortean era has brought us many other stories of this kind. Although here too we find a strange diversity, there seems to be something like a least common denominator: most of the saucer occupants allegedly seen can be described as unprepossessing midgets resembling trolls or gnomes. As John Nicholson said in his article, "Little Green Men" (FU, May, 1958), "an astonishing number of people, here and abroad, testify jointly to the existence of these little men" (who, by the way, are apparently never *green*, and not, in any proper sense of the word, *men*). By now there are well over a hundred reports of this type, and so far as we know, the only one that has yet been exposed as a hoax was the Newton - GeBauer - Koehler "crashed-saucers" tale which Frank Scully publicized in his best-seller of 1950, *Behind the Flying Saucers*. It so happened that this elaborate concoction involved "little men,"

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but in all except content its affinities were with the "contact" stories, and not with the eye-witness reports of goblin-like beings seen near landed UFOs.

Although many saucer researchers "draw the line at little men," it is our feeling that the "goblinesque" creatures deserve serious investigation, and that Fort's project of "rationalizing demonology" in terms of space visitors may yet be taken in hand some day by his UFOlogical heirs.

(7) *The occupants of the spacecraft may be in secret communication with certain human beings.* "I think that sometimes, in favorable circumstances, emissaries have come to this earth—secret meetings—communication with certain esoteric ones upon this earth." (BOD, Ch. 20.)

Fort himself felt that this was a bit risqué: "Of course it sounds—" he added hastily, leaving the sentence unfinished. His caution was justified. Recent years have seen a rank proliferation of self-styled "esoteric ones" of this kind, who are only too glad to divulge their "secret meetings" and "communications" (now vulgarly called "contacts") with the extraterrestrial emissaries.

Compared to the revelations of these "contactees," Fort's discoveries are mere kindergarten stuff. For example, we have been assured that the saucers all contain semi-angelic specimens of the Nordic race hailing from Venus, Saturn, and Jupiter (it seems that our astronomers' ideas about living conditions on those planets are all wet); that they are here to help us, but are not allowed to "interfere" in any way with human affairs; that their chief concern is with our spiritual development (in which respect Earth, they regret to inform us, ranks as the juvenile delinquent of the universe); that all solar systems have twelve planets; that the moon has one side which is always dark, and that Earth has a second moon called "Fowser," *all* of which is dark; and innumerable other interesting and important "facts." There is only one trouble with this variegated information: there is not a scrap of evidence that a word of it is true, but a great deal of evidence—both external and internal—that it is totally false. (See "Meet the Extraterrestrial," by Isabel Davis, FU, Nov. 1957.)

(8) *There are other UFOs which appear to be not machines but some kind of living creatures.* In Fort's words: "It seems no more incredible that up in the seemingly unoccupied sky there should be hosts of living things than that the seeming blank of the ocean should swarm with life. . . . Unknown, luminous things, or beings, have often been seen . . . it may be that some of them were living things that occasionally come from somewhere else in our existence." (NL, Ch. 17; *Lo!*, Ch. 10).

With this guess, it now seems clear, Fort hit another home run. The hypothesis that some UFOs

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may be upper-atmosphere animals, suggested since 1947 by Countess Zoë Wassilko-Serecki and others, has been particularly emphasized by Ivan Sanderson (see "UFO—Friend or Foe?" in FU, Aug., 1957). We too have urged that this appears to fit the observed facts on "angel hair" and "radar angels" better than the spaceship theory (FU, Sept. 1957 and Mar. 1958). Fort cited dozens of cases of "hosts" of roundish objects seen passing in the sky or crossing the sun's disk; nowadays, such "hosts" —acceptably, the same phenomenon —are also seen on radarscopes. It seems that these gregarious UFOs or "angels" may be identified with the ionospheric "jellyfish" of Wassilko-Serecki. As described in our second article (May 1957), from one of these UFO processions, seen over Sweden in 1808, there fell stragglers. They were found to be masses of soapy or jelly-like substance, which very quickly dried to a film and vanished. From this case, Fort drew the conclusion that some hosts consist of gelatinous bodies, or creatures. (NL, Ch. 23.)

In our September article we pointed out the close parallel between this 1808 case and two of recent date: Philadelphia in 1950 and North Carolina in 1957. Since then we have received two more very striking reports of the fall of evanescent sky jelly—adding still further support to the aerial-jellyfish idea, and vindicating once again Fort's confidence in the validity of his data. The first incident occurred in the summer of 1950, near Dorrigo in eastern Australia. Miss Roma Makauskos "saw an unusual object flying toward me, a dirty gray-green disk about a foot in diameter, fluttering in the air. While I watched, it crashed into a concrete gutter. I hurried to the spot and saw only a mass of jelly splashed on the concrete. This jelly rapidly dissolved before my eyes into watery fluid, which evaporated fast. In the middle I noticed a dark little spot, about the size of a pea, which finally also turned to liquid which, in turn, dried out. The whole process took only about 30 seconds and I found myself staring at a perfectly dry gutter."* (This case was reported to the UFO Investigation Center of New South Wales, and was published in the Australian magazine *People* of Jan. 9, 1957.)

The second case, even more conclusive, occurred on February 28, 1958, in North Dade, Florida. From a clear sky, a sphere of glittering, transparent jelly some 18 inches in diameter fell into the back yard of a Miami detective, Faustin Gallegos. It "spread itself on the ground and was working, like it was alive . . . when we poked our fingers into it, there was no sensation of touch." It evaporated rapidly; within half an hour the last trace had disappeared. Gallegos

*According to Miss Makauskos, local people told her they had seen these objects in the air before, but had never seen one fall. "They call them 'flying saucers' and appear not very much concerned about them."

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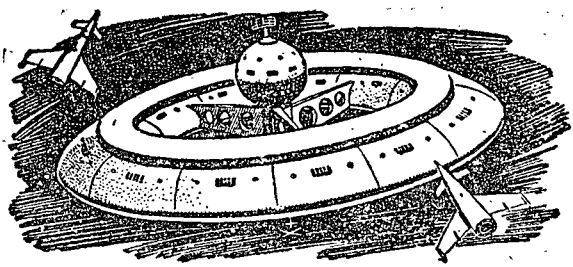
tried to save some in a pickle jar, but by the time he got it to the police station, the jar was empty. (Miami *Herald,* Mar. 1, quoted in the UFO magazine SPACE, March 1958.)

Of course these eight points do not cover all that Fort had to say on the subject of UFOs. After presenting data of mysterious disappearances, for example, he offered the somewhat tongue-in-cheek explanation: "I think that we're fished for. It may be that we're highly esteemed by super-epicures somewhere." (To which he adds the characteristic postscript: "Now and then admirers of my good works write to me, and try to convert me into believing things that I say. He would have to be an eloquent admirer, who could persuade me into thinking that our present expression is not at least a little fanciful.")

And, commenting on the peculiar reluctance of "visitors" to land openly, he was led to an even more extraordinary and evocative conception: "I think we're property. That something owns this earth—all others warned off." (BOD, Ch. 12.)

But these far-reaching speculations, the source of many a science-fiction story, are still no more than speculations. It is otherwise with many of Fort's more "conservative" deductions. Later experience has refuted some, and brilliantly confirmed others. As we have seen, of the eight main tenets drawn from his work, only two appear, as of today, to be invalid: the Venus correlation and the "secret communication" theory. The others remain as the foundation stones of UFOlogy.

And what about UFOlogy since Fort? What new outrageousness has been domesticated since his day? But that is an article in itself. In our next contribution we will complete this summary of "Where do we stand?" by reviewing the things that Fort did *not* know about flying saucers—the things that have been learned, or that have come into being, since the great explorer of the unknown laid down his Herculean pen.



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universe in books

by . . . Hans Stefan Santesson

Comments on recent novels and anthologies, and an important book on rockets, satellites and outer space.

EDMUND COOPER, author of DEADLY IMAGE (Ballantine Books, 35 cents) will be remembered for his prophetic INTRUDERS ON THE MOON (*F.U.*, April 1957) and his more recent THE LIZARD OF WOZ (*F.U.*, August 1958). In the present novel, his first, he elaborates upon a point made by Aristotle—quite some time ago—"Nature makes such a gradual transition from the inanimate to the animate that the boundaries which separate them are indistinct and doubtful."

The pleasure-loving, febrile, and desperately unhappy society which John Markham finds himself in, is a society that can be said to have lost its reason for existence. His reactions to this society in which androids perform most of the functions of life is extremely interesting. DEADLY IMAGE has some of that quality of cold realism, and a rather skeptical look upon Tomorrow, so distinctly a characteristic of better British SF.

You will undoubtedly quarrel with Cooper's thinking—or Markham's, rather—but you *will* agree that the novel is definitely worth reading.

A report on some books of interest to SF and fantasy readers, each book—particularly the anthologies—reflecting the many and varied facets of this field we call Science Fiction. As previously announced, this column will now appear more regularly, discussing books and matters of interest.

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Gerald Kersh's ON AN ODD NOTE (Ballantine Books, 35 cents) is an interesting group of stories by a writer whom a photographer I know took a look at recently, at the Mystery Writers of America's Annual Dinner, and said, — "That man could stand model for the Devil himself!" (There is a lovely little story about the Devil, THE GENTLEMAN ALL IN BLACK, on page 127, which I recommend, by the way.) The publishers' blurb to the contrary, ON AN ODD NOTE is not science fiction—but it *is* brooding fantasy, macabre race memories, and bittersweet oddments from the *Comedie Humaine*. By all means read it!

Willy Ley's SATELLITES, ROCKETS AND OUTER SPACE (Signet, 35 cents) is an excellently illustrated, concise and comprehensive explanation of the basic theories, techniques and possible future of rocketry. Ley compares the work of the Russian and American scientists, something he is uniquely qualified to do, and predicts a number of developments which may be anticipated in the very near future. Discussing, among other things, flying saucers, Mr. Ley, who is a skeptic (and stated his position beautifully in a recent panel discussion arranged by Civilian Saucer Intelligence of New York in which Lester del Rey also took part) concedes the possibility of a visit from space *but* agrees with one Air Force officer who is quoted as saying that he'll be convinced (on the subject of Flying Saucers) only when shown "wreckage, machinery or bodies." Recommended.

Calvin M. Knox's LEST WE FORGET THEE, EARTH (Ace Double Novels, 35 cents) is very definitely "space opera," but not exactly on the heroic level. While a competently told story of intergalactic conspiracy and adventure, there are aspects of the novel which make it an unfortunate echo of the style and social mores current in the late thirties. It's perhaps an unfair reaction, but these characters, even Hallam Navarre, Earthman to Joroiran the Seventh, *are* rather depressing and familiar echoes of a state of mind that one had hoped the field had grown out of. The background is excellent though, and you do breathe (even when wincing) the same air known to Hallam and the others. Raymond Z. Gallun's PEOPLE MINUS X, a reprint, is the companion volume.

Talking of reprints, Ace *has* performed a public service by the reissue of Clifford D. Simak's CITY (Ace, 35 cents) which won the International Fantasy Award when it was first published.

There are some who never quite appreciated Alfred Bester's THE DEMOLISHED MAN; I understand we are in a minority. It may be well to keep this in mind, as you read his decidedly interesting

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STARBURST (Signet, 35 cents), a group of stories reflecting much of the same skepticism about Tomorrow (Madison Avenue style, however—not British) and concession to alleged mass preferences, so obvious in his earlier THE STARS MY DESTINATION (Signet, 35 cents). Perhaps this is naive on my part, but I frankly don't "dig" the world of Alfred Bester—I am thinking of stories such as THE ROLLER COASTER and FONDLY FAHRENHEIT. In fact, I'd even question the description of this book as "superb science fiction" . . .

JOURNEY THROUGH SPACE, by Speedy Williams (L. H. Smith), (Exposition Press, $3.00), describes a journey in a privately constructed aeroform to Phobos, a satellite of Mars, described—correctly so—as a "Shangri-La in outer space." The people of Phobos are descendants of the Atlanteans who had left Earth about 9,000 B.C. and who, to quote the author, "when 50,000 feet in the air, dropped the first hydrogen bomb for the self-destruction of humanity, with the sole intention of destroying the islands and erasing all evidence that they had ever existed. Their engineers had built the giant pyramids with Egyptian slave labor (*which* Egyptians is he talking about?) and they had sailed "the seven seas" over twenty thousand years ago. When the Atlanteans reached Mars, they found there a superior race of humans, so advanced that they had reached the stage of "Eternal Mental Supremacy," far above wars or aggression.

Some of the members of the Williams group visit Mars, in an effort to bring back to Earth for trial there Adolf Hitler and friends, who had fled there, but the Nazis escape. Our friends return home, eventually, after an interesting time on the satellite.

Naive—but interesting.

THE GRAVEYARD READER, edited by Groff Conklin (Ballantine Books, 35 cents) is a group of twelve stories by Henry Kuttner (our secretary shuddered after reading this), John Collier, H. P. Lovecraft, Theodore Sturgeon, Ray Bradbury and others, guaranteed—the publishers assure us—to make you reach for your tranquilizers if you have been reading them late at night. For once I rather agree with a publisher's blurb. Do read this.

Sam Moskowitz, author of the IMMORTAL STORM and noted SF historian, who spoke on SF cover art at the recent Lunarcon, reports that he and Dr. Haycock now have ready more than 300 slides (in full color), of interior illustrations as well as covers. A lecture is planned at ESFA, in Newark, in the fall.

The words on the cover—"it was always open season on escaped Earthlings," rather sums up Jack Vance's SLAVES OF THE KLAU

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(Ace, 35 cents). If you are bored by humanoid and/or golden haired extraterrestrials, and I am the first to agree that they can be unconvincing, by all means read this nostalgic bit of "derring do" where the tough guy shoots his way to an abrupt but naturally satisfactory ending. It seems to me I've run into this basic plot once or twice before, but . . . Vance's BIG PLANET, a reprint, is the companion volume.

Edgar W. Smith, editor of *The Baker Street Journal,* published by the Baker Street Irregulars in Morristown, N. J., had this to say in the course of an editorial on "The Dynamics of a Sputnik" in the January 1958 issue of the Journal.

"All—that Moriarty did in his chosen field of mathematical physics is frightening enough, but it is not as disastrous, we must fear, as the damage he has wrought in the minds and hearts of men. Here was a genius, a philosopher, an abstract thinker possessed of a brain of the first order—and yet, withal, a wicked man. Here was an intellectual, yes—but an intellectual fallen from grace. And so he stands today as the symbol of all that he became, and not of what he had once been."

"It is to this symbol that the intellectuals of our own day in the United States have been sacrificed: it is because we have thought of them as Moriartys in the embryo that we have kept them out of high places and denied ourselves the achievements they might have brought. It was not essential to this denial that, like Moriarty, they should fall from grace; it was enough that they should fall from our esteem. We ridiculed them as eggheads, and looked down on them."

Well, there was Bruno Pontecorvo, for instance . . .

THE THIRD GALAXY READER, edited by H. L. Gold (Doubleday, $3.95), contains fifteen of the best stories from *Galaxy* SF — stories by Fritz Leiber, Lester del Rey, Damon Knight, Isaac Asimov, and others. Extremely interesting.

Gaston Burridge, in an article discussing the possibility that Venus may be a base for UFOs, published in the May 1958 issue of the *A.P.R.O. Bulletin,* published by Coral Lorenzen's Aerial Phenomena Research Organization, raises the possibility of mobile intelligence—if not life—on Venus. Readers who have heard reports of domed cities on Venus with golden-haired six-seven hundred year old Venusians living there, spending their lives in meditation, will please note that this is not necessarily confirmation of reports of returned visitors, who have teleported themselves to Venus . . .

A paper read at the 1956 conference of the Association of Lunar and Planetary Observers at Lowell Observatory, Flagstaff, Arizona, by a Dr. James C. Bartlett, Jr., apparently indicated that the at-

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mosphere of Venus is not always opaque. We quote:

"There have been many observations of rifts or fadings. These indicate movement—something of a turbulence in the Venusian 'air.' Thus it is not perpetually cloudy there. If there is atmospheric movement on Venus, it could well indicate surface movement of the planet itself—a heating and cooling of different parts of that globe. Dr. Bartlett remarks that he has observed evidence leading him to conjecture a possible rotation of the planet at about once per 24 hours."

"There also seems good evidence," continues Mr. Burridge, "of surface markings on the shell when these breaks in the clouds come. These supposed surface markings take on a definite 'spoke-system,' radiating from a central hub. This system has recently been traced by Mr. R. M. Baum, and follows closely that of Percival Lowell outlined years ago."

"The world was never organized to include a faceless man."

In a sense, this sums up the message (in ironic contradiction of the realities, some might add) of Algis Budrys' interesting and decidedly effective novel, *WHO?* (Pyramid Books, 35 cents). The problem is whether the Lucas Martino who returns after four months as an involuntary guest of the Russians—his skull a polished metal ovoid, one of his arms a metal claw—is in reality the missing scientist whose possible brain-washing can be a disaster to the Allied side, or whether he is an impostor, with all that this can imply . . .

Allied Intelligence and F.B.I. men work side by side, in the next months, to break down the story of this man who could have come away "clean," and who could also be a walking intellectual time-bomb, conditioned to react in a certain way, given a certain situation.

The odds are such that no one can gamble on the possibility that the Lucas Martino who walked across the border, the lights glittering in a spray of bluish reflection from his face, *did* come away unscathed—and uncorrupted; security demands that he be taken practically apart, that everything about his past be explored, until the question is answered—*is this Martino?*

Pay no attention to the ridiculous description of Martino as a "Monster Man" on the cover. This is an extremely competent novel, probing with unexpected delicacy into the minds and mores of its characters, testimony to the professional maturity of the writer whose work we have all watched with increasing interest. Recommended.

I can't resist describing a unique contact with extraterrestrials which took place in Japan earlier this year and is reported in *UFO News Report,* official publication of the Yokohama "Flying Saucer Research Group in Japan," edited by Yusuke J. Matsumura.

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Tsutomo Nagai, a young Japanese electrician (?), claims to have been aboard a flying saucer and to have traveled on it to another solar system. Mr. Matsumura, accompanied by Mr. Teizi Ogawa, Mr. Ken Hashimoto, and Mr. Tsutomo Kuwada, of the (Tokyo) "Cosmic Brotherhood Association," interviewed the "young electrical businessman."

Nagai had been fishing, alone, the evening of March 26th, when he spotted a white spherical illuminated object in the sky that was nearing him.

As he neared the object, which hovered near the ground, a spaceman inside the craft motioned to him and soon he got into the craft.

There was only one crew member. He questioned him in Japanese, but the man only smiled and said nothing. Then he tried mental telepathy (Nagai, to quote Matsumura, "is a member of occultism") and the following conversation took place:

Q. "What is this craft?"
A. "This is called a spaceship."
Q. "What energy is used in this ship?"
A. "You may know it."
Q. "Is Space travel by rocket propulsion possible?"
A. "It is not impossible."
Q. "What is your name?"
A. (no answer)
Q. "Where do you come from?"
A. (no answer)
Q. "Hereafter we go where?"

(The ship was apparently aloft by now.)

A. "You may understand after the ship is landed."

A few minutes later the ship was descending, hovering over "plants" and fields. He looked out over the towns—"the buildings are built in a circular pattern and have no electrical poles and wires." He asked where they were, and was told, — "This is Irland—not your solar system." After a minute there was the addition, — "Today, you are invited to a theater."

The ship moved again, landing, shortly afterwards, on the roof of a big circular theater. They got in through a door, and found the people on the stage were playing something that seemed to be a fairy tale. Mr. Matsumura continues: "He looked round about him in every direction. Planet Irland people is not different from our Earth people and somewhat like to the Japanese."

They stayed at the play for more than an hour, after which they returned to the ship. He fell asleep on the return to Earth, waking at "his branch office's garden in Gunma Prefecture."

The reactions of the men who interviewed him appear to have been mixed, with only Mr. Kuwada half-convinced that the story might be true.

This writer is obviously neutral in the fanfeud at present making the lives of so many people back

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here in the East much more exiciting, but I can't help sympathizing with John Magnus' reactions in his fanzine (*Rumble No. 13,* Baltimore, June 1, 1958) where he writes:

"We need about six new zines" (SF fan publications) "to be published frequently, publish lots of new fan writers, and ignore completely the inanity of fandom's file-clerks and fault-fanatics. We need about fifty new fans who like each other enough not to make back-stabbing their favorite activity, and their favorite subject for writing. Then the minority can sit in their sickness and giggle and point, and foment libel or lawsuit, depending on whether they get their kicks from idiocy or worse."

Amen!

While we're on this subject of fans, however, are *you* planning to attend the 16th World Science Fiction Convention in Los Angeles? The SOLACON will be held at the Alexandria Hotel, 5th and Spring Streets, August 29th through September 1st, 1958. Richard Matheson, will be the Guest of Honor on this occasion.

Membership in the SOLACON is One Dollar, and entitles you, among other things, to the Program Booklet, which will contain an up-to-the-minute list of members and their addresses, "a directory of fans and pros." Send your dollar to Rick Sneary, Treasurer, SOLACON, 2962 Santa Ana Street, South Gate, California. And plan to attend if you can!

Both Detroit and Dallas are bidding for the next World Convention. Dallas fans meet, incidentally, this 4th of July weekend, at *Southwestercon 6.* For further details, contact Richard Koogle, 4243 Buena Vista, Dallas 4.

One final word on the subject of UFOs. Well, the last word for this month, anyway.

Ivan T. Sanderson has an extremely important article in this issue which I suggest you read and reread slowly and carefully.

This article raises the possibility that some of the UFOs, seen here and abroad in recent years, are not aeroforms coming from outer space —but from considerably closer home. This writer has seen and examined his references.

But to return to books.

Three rather vaguely drawn extra-terrestrials (none golden haired) are assigned to visit devastated Earth to check on whether life is extinct and, if this be so, to find out how and why. The Government of the Great Galaxy (!) wants to know whether Earth is suitable for colonization by "our species," and whether it will be possible to create Earthmen and/or Earthwomen "by laboratory methods."

Horace Coon's *43,000 YEARS LATER* (Signet, 35 cents), which suggests that we are heading for

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extinction in the comparatively near future, is supposed to be as startling as Orwell's 1984.

I disagree.

To mutter all sorts of things about us foolish humans ("What strikes me most forcibly at this stage of our investigation was the prodigality, the pure and simple wickedness of the way in which they wasted their most precious possession—time."—p. 75); to have a spaceship-cum-ruined-cities on the cover; and to feature a group of freudian extra-terrestrials; and the fact that robot-life is cheap (p. 136), doesn't necessarily make the novel science-fiction!

Signet has, incidentally, reissued Robert Heinlein's classic THE GREEN HILLS OF EARTH (Signet, 35 cents), a former Shasta title. This should be welcome news for the many who respect Heinlein, historian of a possible Tomorrow.

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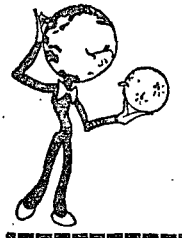

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saucer in the klondike

by . . . C. G. Scholtz

Life on this planet was a finite continuation of experiences begun a very long time ago when Man was young.

IT HAPPENED during that cold bleak winter of 1913-1914. I was marooned in my cabin in the Yukon Klondike area of Canada by a severe blizzard, and that evening I was seated in a large old-fashioned rocker which had been presented to me some years before by an old prospector who was leaving for a visit to relatives in a city in the States, reading about that snow demon in the Himalayas, when I was conscious of a loud roar much too loud to be caused by the blazing logs in the fireplace, a necessity in this weather.

I went to the door, the entire snow covered countryside was lighted up as though by a huge searchlight. As my eyes grew accustomed to the light I was aware of a large cigar shaped machine the like of which I had never seen before, nor had I ever read in any fiction book about such an odd shaped machine which could apparently suspend itself motionless in the air.

While I stared in amazement from the bottom of the object descended a bowl of shining metal straight to the snow banks around the cabin and from the bowl step-

The author, who is an office manager for a group of insurance companies, writes that he finds it most amusing to tell these stories when with people who expect him to be — well, somewhat conservative — and are, understandably, shaken to hear him "expound on these strange theories."

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ped a giant of a man who strode straight toward me.

As he drew closer I saw he was clothed in what appeared to be shining armor, however, I learned later it was a cloth made from material unknown to man on this earth. He spoke a dialect I did not understand and when he observed my inability to comprehend he changed from one dialect to another until he finally spoke pure English.

I invited him inside, he stooped to enter, he was so tall, about 10 feet I judged, I offered him my old rocker for that was the best piece of furniture I possessed. As he sat down he inquired as to which section of the Earth he was in, I told him and he said, "Oh, yes," he remembered reading about Canada centuries before when he was on Earth as a member of the Blackfeet tribe of Indians.

By this time I had recovered from my surprise and started to ask him some questions myself. His statement about being on Earth before intrigued me. I told him I was completely dumfounded, in fact I thought I must be dreaming but I pinched myself and I sure was not dreaming.

He explained that he was stationed on a planet far out into space, not one of the planets attached to our galaxy but one he called Factor 8 which was four light years away from Earth (that would be the distance one would travel in four years going at the speed of 186,000 miles per second). He was not the man from outer space, a man from Mars, which we read so much about today, he really was a man from *outer* space.

He further said that planet Factor 8 was the destination of all human beings on our Earth when they died, regardless of race, creed or color. When they arrived at Factor 8 they would assume the physical stature of him but not be flesh and blood as we know it here on Earth, they would be clothed in this special silver colored cloth which actually was their skin as near as I could understand his explanations.

On Factor 8 the inhabitants came from other planets as well as from Earth which would indicate there must be many inhabited planets in the Universe.

I asked my visitor to have a cup of tea but he refused saying all they needed for food and drink was one pill per day, that pill containing all elements needed for energy and any other requirements.

On Factor 8 there are no automobiles, airplanes and boats as we know them for there is no ground, water and very little air; the entire planet is composed of magnetic rock from which have been excavated huge underground rooms which house the population, factories and other things essential to their type of life.

Their transportation is individual, each person being supplied with his own anti-magnetic shoes which enables him to suspend himself above the rock or attach himself to the

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rock simply by a button arrangement which changed the shoes from anti magnetism to magnetism; his forward movement came from his cap inside which was a small receiving set which could be set to follow any one of thousands of beams of energy which surrounded the planet, this made for swift travel to any point on the sphere.

Being of an inquisitive nature myself I asked what status did criminals and others who were bad during their lifetime on Earth have on Factor 8—did they have the same privileges etc. as others? What connection, if any, existed between the life span on Earth and that on Factor 8? He replied that as we had had a life on another planet before coming to Earth so life on Factor 8 was a continuation of a series of experiences all similar to a large Book with each episode a chapter in that book. We would never be able to get to Factor 8 by any other means than death. However those who had a bad record on Earth and on the planets before that were given a servant status to spend all their life working for those whose record warranted the positions of overlords, thus was the question of how does it happen so many can do wrong on Earth and apparently get away with it answered by the words ultimately they do not.

I asked what was the life span on his planet and he said 500 years to a day. On their 500th Birthday all must die but there were no deaths before reaching that age. This phenomenon he could not explain. He said even with their greater scientific knowledge there were many questions still unanswered; undoubtedly some would become clear when they went to the next galaxy for the next chapter in the life parade.

I questioned him about the limit of our knowledge on Earth and he said very definitely man's minds could only fathom certain phases of life the rest were reserved for the future.

On Planet Factor 8 the population could pick up thought waves from Earth and thus keep in fairly close contact as far as events on Earth were concerned but they could not make themselves understood on Earth as we had not and probably would never advance to the knowledge permitting exchange of ideas between the planets.

While as he stated no one can advance ahead of their position in the life pattern, it was possible by the time one reached Planet Factor 8 to retrace their footsteps but only on special occasions. Periodically these super crafts, one of which was then hovering over the cabin, were sent out to check on the progress of man and on some occasions individuals were permitted to go along and visit their old folks on Earth but always they must wear a black cape which had the power to make them invisible to anyone on Earth.

This seemed to me might explain some of the stories of ghosts and

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unexplainable events we read so much about these days.

Just at that moment a mosquito buzzed by and I asked what about insects on Factor 8. The answer was that the only insects were ones that ate rock and were the size of an ordinary cat. The population lived in fear of them but they could be and were killed at night and only at night. When darkness descended some strange numbness came over these insects and they lost their ability to fight and thus were easily ferretted out and killed. A special force was kept to handle this work.

By this time the fire in the fireplace had died down so I got up and went into the shed for some more logs and as I turned once again to talk with my strange visitor he pointed to the fire and said that was something unknown on Factor 8 as all their heat came from the interior of the planet itself and furthermore there were no trees and thus no lumber or logs on the planet.

At that moment I heard a low whistle, my visitor stiffened and arising from the chair thanked me for my hospitality and said he must return to his ship, that apparently the crew had repaired the magnetic compass so that they could proceed. It would be a long journey back, a four-year trip, but he must go. As he left the cabin he gave me a small lead box and told me that some day it would bring me a fortune as it was uranium, naturally an unknown substance at that time.

He told me to bury it until my fellow men came upon the knowledge permitting them to use that element. I did that with much misgivings about the whole matter.

Since that day I have never dared mention to anyone about my experience. I even doubted my senses but with so many accounts of flying saucers today I feel that maybe I was fortunate to be the first to receive an official visitor on Earth from outer space.

You, my readers, must decide whether the above is possible or whether I actually fell asleep in the big chair by the fireplace that wintry night and dreamed the whole affair.

For my part I neither confirm nor deny. Oh yes, I am now on my way back to the site of that cabin, if I can find it after 40 years of storm, weather and neglect, which may have obliterated the building and landmarks, but I shall try to find that box and its contents not only for its present day value but more important to settle my own doubts and to present to the Scientific World proof of the facts until now only speculated on by the wildest imagination.

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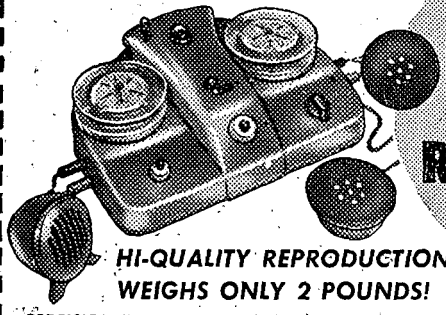

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